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SUBJECT INDEX TO THIS ISSUE

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TRAINING IN OTOLARYNGOLOGY*

GEORGE MORRISON COATES, M.D.
PHILADELPHIA

Although nearly all the chairmen of this section for a decade past have concerned themselves in their addresses to a greater or less degree with the subject of the training of the specialist, I find myself, at the risk of being thought lacking in originality, unable to forebear an attempt to emphasize further some features of this most important problem. It is only during the past ten years, or since America's entrance into the war, that attention has been focused on the inadequate preparation that many initiates into the specialties, including ours, were receiving, and on the quite unsatisfactory facilities, either here or abroad, for giving a beginner in otolaryngology a sound basic training. Discussion of this subject for the most part was on the kind and amount of such training needed, and a satisfactory plan was eventually evolved by a committee representing all the national special societies, which plan forms the working basis today of most systematic graduate or postgraduate special instruction. Two years ago the American Board of Otolaryngology was formed by accredited representatives of these societies whose duty it is to examine for a certificate of proficiency all candidates presenting themselves. This is in line with the policy of improving the standard of otolaryngology and in checking up the work done by the various agencies of instruction, and so must be classed as a valuable, if not a vital, part of the system of graduate instruction now slowly being evolved. Our society can justly pride itself on the work done by our delegates to both of these committees; in particular those serving on the American board, which is surely a labor of love entailing the loss of much valuable time from home and work, traveling from coast to coast and from North to South to attend committee meetings and examinations held twice or thrice a year in different sections of the country in order to accommodate as many candidates as possible. The work of examining a large body of men is not an easy task in itself, and that it is conscientiously and not perfunctorily done is attested to by the fact that about 15 per cent of those examined have failed for certification. Our representatives on the board will give a formal report during the business session.

But is the study of the subject of training in the specialty exhausted by the steps that have been taken? Surely not, for after all we are only at the beginning of the work, even as the holder of a certificate of proficiency for a year's work in a graded graduate school is only barely prepared to begin the serious and deep study that should end only with retirement or death. We cannot remain stationary for long; when we cease to be students we shall begin to slip backward and the end is near. We, the members of this progressive society, are always students, else why do we hold these meetings and why attend them? These excellent programs are graduate instruction, higher graduate instruction, if you like, and we who attend and take part are both graduate students and instructors.

As we proceed in our training year by year, we gather experience, which cannot in large measure be supplied by class room or clinic instruction but must be accumulated and assimilated by the individual. But the results of such experience may and should be brought to this platform, and to those of the other societies, for the benefit of all the rest of us students, old or young, in the specialty.

For those of us who are advancing in years of special practice, is there then so much to be learned? Assuredly. What year or month goes by without a host of new and worth-while observations on disease and its remedies being brought to light; the passing of some old and tried procedure replaced by a better one? Look at the titles on the program of this meeting, assembled by the efforts of our distinguished secretary, Dr. Mullin. How many of us dare say we are familiar with all or most of these subjects?

There are certain phases of training after the school or university graduate course has been accomplished that I feel have been neglected in the past and that could be utilized to a marked degree in helping onward the instruction of the tyro. The preceptor system should be revived where it has died away, at least to the extent that every chief of department or service in our hospitals should act as preceptor for the assistants under him. Many chiefs, to their great credit, do so now; but this system might be extended, and should be so extended to every service. The older man should continue personally the training of those under him, watching their work, consulting with them freely about their cases, directing their reading and encouraging them in case reporting, research work and writing. And above all he should supervise their operating and see to it that they have ample opportunities to learn the major as well as minor surgery of the specialty and be given opportunity, as soon as they show proficiency, to operate "in the house." There are men who have served year after year loyally in the dispensaries with never a chance to learn to do the major surgery required of the competent otolaryngologist of today. Each chief, whether in a teaching position or not, should, with an eye to the time when he will perforce be compelled to retire, be strenuously training the men under him to succeed and carry on the work of the

* Chairman's address, read before the Section on Laryngology, Otology and Rhinology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 18, 1927.

department. Such a system begets loyalty to the department and serves best the interests of patients and hospital alike. No chief should allow his assistants to do all the work, nor should he reserve all the major surgery for himself. If he makes the excuse that he has no one under him capable of substituting for him, it is a lamentable state of affairs, dangerous alike to patients and to hospital, and surely his own fault. It should be part of his job to train at least one capable assistant. Many hospital boards object to allowing the dispensary or outpatient physicians operative privileges in the hospital operating room. They should be shown the error of their ways and persuaded to change their rule in this respect. I feel strongly on this subject and gave my views on it a few years ago in a chairman's address before another society.

In what one particular way do we, as a group of students of otolaryngology, most need instruction at the present time? I hazard a guess that it may be in the realm of diagnosis. No one nowadays doubts or undervalues the need for assistance from many other specialties, but are we not, possibly, allowing some of them to do our work of diagnosis for us?

The pediatrician sends us a patient with the request that we remove the tonsils and adenoids. He has already made the diagnosis, from his standpoint, and may even suggest that the operation be done at a certain time and place without the formality of the laryngologist even seeing the patient before he is on the operating table. Or the patient may be examined and pronounced normal, but the reply often is: "I do not agree with you, take them out anyhow." Are we or are we not as competent to make the diagnosis as he; if not, how can we become so? And if we decline to operate on his diagnosis, what happens? You all know the answer.

Just recently the pediatrician has been referring his cases of athrepsia, malnutrition or dehydration to the otologist requesting that mastoid drainage be performed, even in the absence of the otologic signs that we are accustomed to associate with middle ear and mastoid infection. Is the pediatrician justified in assuming under certain conditions that the source of the trouble is otitic even when the otologic examination fails to disclose customary signs of infection? Or is it a fact that the otologist cannot, in these cases, make a positive diagnosis from such signs and symptoms as may be present?

The internist, who has a case of baffling headache, has the nasal accessory sinuses roentgenographed. The roentgenologist reports one or more cavities infected and probably reports in addition that the septum is deflected and the turbinates are hypertrophied. The patient is thereupon referred to the rhinologist, arriving with the roentgenologic report and plates, the diagnosis already made, with a request that the septum be straightened, the turbinate hypertrophies corrected and the indicated sinuses drained. Is the rhinologist compelled to accept this ready made diagnosis, and how many do accept it and do the surgical work as directed? And in such a case how about the average after-results and who gets the discredit in an unsuccessful case? I submit that it is usually the surgeon who did the work.

Or, again, the otologist sends his case of doubtful mastoid infection to the roentgenologist for a roentgen-ray study. Not infrequently the report is that the films show cell wall destruction and cavity formation; that the patient should be operated on without delay. If he follows this advice as a routine, without a careful balancing of the clinical and laboratory reports and without a careful reading of the plates himself, he will sooner or later open mastoids that do not need operative intervention.

The neurologist tells us that there is a brain abscess in a certain location which should be drained immediately; or that there is no brain abscess where it was thought that one existed. Is the training of the average otologist in the diagnosis of these intracranial conditions sufficient to enable him to take issue with the neurologist in the matter if his judgment does not coincide with that of the latter?

The internist, outlining the treatment of a patient with arthritis, by cultural methods or otherwise makes his own diagnosis of tonsillar infection as being the probable focus from which the disease originates. Can the laryngologist, by inspection, suction or compression controvert his diagnosis in the absence of notable observations by these methods?

Does not the ophthalmologist, at times, rather insist that in a case of retrobulbar neuritis the posterior sinuses be drained and ventilated, or that the tonsils be removed even in the absence of positive rhinologic observations?

These are but examples—many more will doubtless be thought of. I do not dispute the fact that the internist, the roentgenologist, the pediatrician, the ophthalmologist and the neurologist may be right and in a better position to make a good diagnosis of the local condition than the otolaryngologist in some or in many cases; but does this not call on us to study the question of diagnosis, improve our training, in order that improved methods and better understanding may result? In spite of all the improvements in diagnosis that we can obtain, we shall still need the closest cooperation with our brethren in the other specialties, for in that way most surely can error be avoided and diagnosis corroborated.

Shambaugh, last year, in an address before the American Laryngological Association, warned us as specialists against fads in our practice and against indiscriminate operating, without careful and competent otolaryngologic diagnosis, on many conditions referred to us by the other specialties or by the general practitioner, thereby allowing the diagnosis to be taken out of our hands or made to order for us. If we allow this, our specialty is placed under the domination of the others and we are in danger of becoming mere operating machines. On the other hand, since the science of medicine has become so complex that no one man can even remotely hope to grasp all its many details, the solution would seem to lie in most careful graduate teaching, and postgraduate training and study, careful consideration of every otorhinologic phase of the case under observation in relation to the symptoms for which relief is sought, and most thorough and hearty cooperation with those better qualified than we are to understand disease manifestations in other portions of the body.

As the establishment of longer, full-time, systematic courses of graduate instruction under university auspices becomes more general, and as the certificate of the American Board of Otolaryngology becomes more generally recognized as indicating competence in the practice of the specialty, the old short time courses may be expected to disappear gradually and our standing as otolaryngologists to improve. Much otolaryngologic work will, of necessity, continue to be done by general

practitioners and so-called specialists who have not had sufficient instruction and training; but the amount so done should become less and less as the years go by. Shambaugh protests against the training of interns in operative technic without giving instruction in the basic branches of anatomy, physiology, pathology and diagnosis as applied to otolaryngology. I am in entire accord with this view. The intern naturally is anxious to acquire what surgical skill he may and welcomes the chance to do tonsillectomies and septum operations, and there is great temptation thus to reward a faithful and hard-working intern. We must remember, however, that by being good natured in this respect we are adding to the very class that we are trying, by means of our work for higher education of the specialist and by the examination of our board, to eliminate. By contributing to the enlargement of this class of untrained specialists we are not safeguarding the best interests of the sick patient or the reputation of our specialty.

1721 Pine Street.

ANTIRACHITIC ACTIVITY OF IRRADIATED CHOLESTEROL, ERGOSTEROL AND ALLIED SUBSTANCES *

ALFRED F. HESS, M.D.
NEW YORK

About three years has elapsed since it was shown in this laboratory that vegetable oils can be rendered highly antirachitic by irradiation with ultraviolet rays.[1] Similar results were reported by Steenbock and his co-workers.[2] In the course of a large series of experiments it soon developed that vegetables can be activated by this means, and furthermore that when they have been thus transformed—for example, carrots or spinach—they retain their antirachitic potency even after being cooked. The problem rapidly assumed a chemical aspect, for it was found that the underlying chemical substance in the oils or vegetables which enabled them to be energized in this striking way was the cholesterol in the animal cell, or its counterpart, the phytosterol, in the vegetable cell. The antirachitic action of the various irradiated foods and chemical substances was established in the laboratory and in the clinic.

From a therapeutic point of view it was of especial interest that dried milk could be rendered antirachitic by this means. That such was the case was shown by Hess and Weinstock on animals and in a study on a series of infants.[3] This experience has been confirmed by numerous observers. For example, György[4] has shown that irradiated dried milk is of value not only in infantile rickets but also in tetany, and Hottinger[5] found such milk more potent even than cod liver oil or its nonsaponifiable fraction, and almost the equivalent of direct irradiation of the child. MacKay and Shaw[6] treated three cases of rickets and one of tetany with irradiated dried milk with notable success; in two instances, the milk was boiled following activation. They regarded their results as comparable to those brought about by direct irradiation. It is evident, therefore, not only that dried milk can be activated but also that it acquires exceptional potency. It may be added that it retains this power for a long period in spite of conditions tending to destruction. In my experience, irradiated dried milk kept in a cupboard under ordinary conditions for a period of half a year loses but little of its antirachitic properties; even after a year the activity was found to be only moderately diminished.

In these early experiments the dried milk was irradiated by means of a mercury vapor lamp for a period of one-half hour at a distance of 1 foot. This intensity of irradiation was associated with certain disadvantages; it led at times to a peculiar alteration in the taste and odor of the milk. As noted in the very first experiments, oils "frequently acquired a somewhat fishy odor resembling that of cod liver oil." Because of this peculiarity, some German writers have given the name of "jecorisation" to the irradiation of oils and other foods. In order to avoid the development of this disagreeable taste or odor, we have subjected dried milk to a diminished intensity of irradiation. It has been found that exposure for a period of two minutes at a distance of from 10 to 12 inches is quite sufficient to render it antirachitic. In general, it may be stated that there does not seem to be a direct ratio between intensity of irradiation and the acquisition of antirachitic properties. This holds true likewise of cholesterol, which can be rendered antirachitic by short exposures—two minute periods at a distance of 1 foot. Short irradiation has the additional advantage of avoiding the destruction of the "fat-soluble" and the antiscorbutic vitamins of the milk. As is well known, these nutritional factors are peculiarly sensitive to oxidation, a process that takes place in the course of irradiation with the mercury vapor lamp. If, however, the milk is subjected to exposures not longer than a few minutes, practically no loss of either of these vitamins ensues.

Soon after the publication of the investigation on the activation of foods, it was shown that cholesterol could be activated readily by these rays.[7] Again, the first tests were carried out in the laboratory and confirmed by observations in the clinic. It was clearly shown that rickets in infants could be cured by the addition to the diet of a 3 per cent suspension of cholesterol in olive oil. Given in this form, cholesterol brought about rapid calcification of the epiphyses, as well as an increase in the percentage of inorganic phosphorus in the blood. It subsequently developed that 1.5 per cent of cholesterol, given in teaspoonful doses three times a day, suffices to bring about the healing process. These experiences with cholesterol have been confirmed in Germany by György and his co-workers,[8] who reported the curative properties of irradiated cholesterol for rickets in animals as well as in infants. Drummond, Rosenheim and Coward[9] noted similar results in animals, and Parsons[10] reported an instance of severe rickets which, failing of cure by cod liver

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2. Steenbock, Harry; and Nelson, M. T.: Science **60**: 224, 1924; J. Biol. Chem. **62**: 301 (Dec.) 1924.
3. Hess, A. F., and Weinstock, Mildred: Proc. Soc. Exper. Biol. & Med. **22**: 319, 1925. Hess, A. F.: Antirachitic Activation of Foods and of Cholesterol by Ultraviolet Irradiation, J. A. M. A. **84**: 1910 (June 20) 1925.
4. György, P.: Klin. Wchnschr. **4**: 1118 (June 4) 1925; **5**: 747 (April 23) 1926.
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8. György, P.; Jenke, M., and Popoviciu, G.: Jahrb. f. Kinderh. **112**: 35 (March) 1926.
9. Drummond, J. C.; Rosenheim, O., and Coward, K. H.: J. Soc. Chem. Ind. **44**: 11 (March) 1925.
10. Parsons, L. G.: Brit. M. J. **1**: 519 (March 20) 1926.

oil, yielded when irradiated cholesterol was administered. Favorable clinical experiences have been reported also by Goettche and Tolnai.[11] Hottinger has published a favorable account from Basle in his paper entitled "Irradiated Cholesterin in the Therapy of Rickets."[5] Rosenheim and Webster[12] have shown that, as might be expected, "cholesterol is rendered antirachitic by exposure to sunlight as well as to other sources of ultraviolet light." It will be seen that a considerable literature has already developed in relation to this subject, and that opinions are unanimous as to the antirachitic efficacy of irradiated cholesterol.

Recently, we have added irradiated cholesterol to cod liver oil in order to increase its antirachitic titer. Although cod liver oil must be regarded as a specific therapeutic agent, it fails at times to prevent the development of slight degrees of rickets, owing to the fact that infants cannot tolerate a sufficient quantity to insure complete protection. With this problem in mind, we have fortified cod liver oil by the addition of 1 per cent of irradiated cholesterol. This amount readily goes into solution, and animal tests have shown a threefold increase in the potency of the cod liver oil. It

TABLE 1.—*Antirachitic Action of Irradiated Dried Brain*

Weights of Rats, Gm.	Rickets-Producing Ration	Supplement of Dried Brain	Rickets		
			Roentgenographic	Macroscopic	Microscopic
44-50	Low phosphorus	10 mg. irradiated	None	None	None
40-44	no. 84	2 minutes at 1	None	None	None
40-40		foot	None	None	None
38-34	Low phosphorus	10 mg. irradiated	None	None	None
42-50	no. 84	2 min. at 1 ft.,	None	None	None
40-50		stored 5 mos.	None	None	None
50-50	Low phosphorus no. 84	50 mg. irradiated 2 min. at 1 ft., stored 5 mos.	None	None	
40-42	Low phosphorus	50 mg. not irra-	Moderate	Moderate	
50-54	no. 84	diated	Slight	Moderate	Moderate
34-44			Slight	Moderate	Slight
30-50			Very slight	Slight	Slight or moderate

had been imagined that a similar result could be brought about by the irradiation of cod liver oil, by activating the cholesterol which forms so large a proportion of its nonsaponifiable fraction. Oddly enough, irradiation of cod liver oil was found to render it less rather than more potent. This unlooked for result was described by Adam,[13] who found that although the dosage of irradiation corresponded in intensity with that which regularly activates cholesterol—one-half hour at about 1 foot distance—the oil lost potency, as judged by animal as well as clinical tests. Its viscosity and surface tension were increased, and its iodine number was lowered. It seemed that the inactivity was brought about by the saturation of the sterol in the cod liver oil. This result—a striking example of the necessity of subjecting theory to the test of experiment—has been confirmed by other observers.

Another means of giving activated cholesterol or an allied sterol was provided by feeding irradiated brain. As is well known, the brain contains more cholesterol than any organ in the body. In the first experiments the tissue was irradiated in the natural moist state, but later it was found of advantage to dry it by means of a fan, and to subject the powdered residue to the rays of a mercury vapor lamp. Ten milligrams daily of this material suffices to bring about healing in rats that are receiving the standard low phosphorus (Sherman-Pappenheimer) diet. Irradiated brain maintains its potency for at least five months; a preparation that was irradiated last spring was found to be practically unaltered when retested in the autumn, as recorded in the accompanying table. During the past winter, irradiated brain has been fed to a number of infants who were suffering from rickets, as judged by roentgenograms and by the low percentage of inorganic phosphorus in the blood. It was found that curative processes rapidly ensued when 1 Gm. daily of this preparation was given; the minimal dosage has not been ascertained. It may be added that this powder is tasteless and odorless, and can be mixed readily with milk.

During the past year there has been considerable advance in our understanding of the chemical changes associated with the activation of cholesterol, although the process involved is by no means clear. The melting point, the optical rotation and the composition according to analysis are found to be unaltered in the cholesterol subsequent to irradiation. One definite and characteristic change comes about; namely, an alteration in spectral absorption. Cholesterol has a distinctive absorption of certain ultraviolet rays, a phenomenon that is constant and reproduceable. Hess and Weinstock[14] found that, following irradiation in an alcoholic solution, cholesterol consistently absorbed less ultraviolet energy and transmitted more of these radiations than a similar solution that had not been irradiated. The spectral lines between 280 and 285 millimicrons are particularly suitable for judging the optical change of cholesterol brought about in this way. These results with absorption spectrums have been confirmed and elaborated by Schlutz and Morse,[15] and more recently by Pohl of Goettingen.[16] This rapid method makes it possible to eliminate the long delays inherent in animal experimentation, and necessary to test only such substances biologically as have been found altered in their absorption spectrums. By this means, it has been possible to examine in a very short period a considerable series of sterols prepared in the laboratory.

One of the first points noted in connection with the chemical changes in the activation of cholesterol was that these changes depended on the presence of the double bond; in other words, of the unsaturated carbon linkage. If the cholesterol were saturated, for example with hydrogen, it no longer could be rendered antirachitic,[17] and spectrograms failed to show the typical alteration in the absorption of ultraviolet rays. This observation has been confirmed by György and Jenke[18] as well as by Rosenheim and Webster[12] and Bills and McDonald,[19] who demonstrated the importance of the secondary alcohol group in the sterol molecule in connection with activation. The alcohol group does not have to be intact, but the hydroxyl may be replaced by certain acid radicals.

At first it was thought that the activation was due to oxygenation, but many experiments from various

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12. Rosenheim, O., and Webster, T. A.: Biochem. J. **20**: 537, 1926.
13. Adam, A.: Klin. Wchnschr. **5**: 1648 (Sept. 3) 1926.
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16. Pohl, R.: Gesellsch. Wissenschaft., Goettingen, Math.-Physik. Klasse, Dec. 10, 1926.
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18. György, P., and Jenke, M.: Jahrb. f. Kinderh. **115**: 68 (Jan.) 1927.
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sources have shown that this inference is incorrect. The very fact, as reported in one of our first experiments, that cholesterol can be activated when suspended in liquid petrolatum indicates that the presence of oxygen is not essential. Furthermore, the antirachitic change occurs in cholesterol that has been irradiated in an atmosphere of nitrogen. Rosenheim and Webster, as well as György, showed, however, that oxygen decreases the stability of the antirachitic properties; cholesterol that has been irradiated in nitrogen retains its antirachitic potency far longer than that which has been irradiated in air.

Recently, the question has been raised as to whether it is the cholesterol itself that is activated or some impurity or contaminating substance intimately associated with it. There were various reasons for suspecting that such might be the case, primarily the observation that less than 1 per cent of cholesterol is activated by the ultraviolet rays. It would lead too far afield to review the chemical manipulations which have led to the conclusion that it is not cholesterol but an associated sterol which is altered. This question has been discussed recently in detail in papers by Windaus and Hess.[20] The main evidence is that when cholesterol has been purified, either by recovering it from the dibromide or by means of animal charcoal, it can no longer be activated. This conception was also brought forward by Rosenheim and Webster[21] and by Heilbron and his co-workers,[22] and might be inferred from some experiments of Koch, Cahan and Gustavson,[23] who were able to separate activated cholesterol into two fractions by means of liquid ammonia.

Having in mind the possibility of a contaminating sterol, Windaus and Hess prepared and tested a large series of preparations to ascertain whether they could be rendered antirachitic by means of irradiation.[24] Of this series the only one that was specifically altered, as judged by the spectral absorption test, as well as by animal experimentation, was ergosterol prepared from yeast. Ergosterol is an optically active sterol possessing three double bonds and a hydroxyl radical; its molecule, therefore, possesses the two factors that have been proved to be essential to the activation of cholesterol derivatives and allied sterols. Irradiated for one-half hour at a distance of 1 foot, ergosterol was found to bring about healing of the bones in rachitic rats when as little as 0.002 mg. per capita was given daily. This infinitesimal amount is by far the smallest quantity of any vitamin or specific nutritional factor that has been shown to possess curative properties. It will be remembered that approximately 1 mg. of irradiated cholesterol is required to protect a rat from rickets. Activated ergosterol is therefore about 500 times as potent as irradiated cholesterol.

We have not yet tested irradiated ergosterol in the clinic, but have made use of irradiated yeast from which, as stated, the ergosterol was extracted. For this purpose, irradiated brewers' or bakers' yeast has been used. The dried yeast was spread in a thin layer and irradiated at a distance of 1 foot for a period of one-half hour. From 10 to 25 mg. was given daily to each rat, and was found to bring about calcification of the epiphyses. Whether a smaller amount would be effective has as yet not been ascertained. In the treatment of rachitic infants from 0.5 to 1.0 Gm. doses were given daily, suspended in milk. This preparation was readily taken, and brought about not only a definite curative process but also in some cases an increase in weight, a temporary growth stimulus described some years ago when autolyzed yeast was fed to infants.[25]

It is possible that ergosterol is the essential impurity in cholesterol, and that activated ergosterol is the antirachitic factor or vitamin. It would seem more probable, however, that other unsaturated sterols will be discovered which can be rendered antirachitic by ultraviolet rays, and that ergosterol is merely one member of this group.

TABLE 2.—*Antirachitic Action of Irradiated Dried Yeast*

Weights of Rats, Gm.	Rickets-Producing Ration	Supplement of Dried Brewers' Yeast	Rickets	Inorganic P, Mg. per Cent
46-40	Low	5 mg.	None	
60-52	phos-	irradiated	None	4.9
50-60	phorus	½ hour at	None	
60-62	No. 84	1 foot	None	
40-44	Low	10 mg.	None	
60-68	phos-	irradiated	None	4.3
46-44	phorus	½ hour at	None	
50-46	No. 84	1 foot	None	
44-44	Low	25 mg.	Moderate	
52-60	phos-	not	Moderate	2.4
60-70	phorus	irra-	Moderate	
40-34	No. 84	diated	Very slight	

CONCLUSIONS

The most practical application of an irradiated food is the use of irradiated dried milk for infant feeding. It is the unanimous opinion that dried milk treated in this way prevents or cures infantile rickets and tetany. The specific activity of the milk is maintained for a period of at least six months.

Irradiated cholesterol has been successfully used as an antirachitic. It may be added to cod liver oil to increase its potency.

Dried brain, which contains an exceptionally large amount of cholesterol, was irradiated and used successfully.

It has been shown that it is not the cholesterol itself which undergoes activation, but probably a contaminating sterol intimately associated with it.

Among a large number of sterols which were irradiated and tested for antirachitic power, Windaus and Hess found that ergosterol was the only one which acquired antirachitic activity. This sterol, which was prepared from yeast, brought about calcification of the epiphyses experimentally when as little as 0.002 mg. was fed daily. This is the smallest amount of any of the nutritional factors or vitamins which has been found to exert a specific action.

Instead of ergosterol, irradiated yeast may be employed as an antirachitic. This product has been found highly effective in animals and in infants.

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20. Hess, A. F., and Windaus, A.: Proc. Soc. Exper. Biol. & Med. **24**: 171 (Nov.) 1926; 369 (Jan.), 461 (Feb.) 1927. Windaus, A., and Hess, A. F.: Gesellsch. d. Wissensch. z. Goettingen., Jan. 28, 1927.

21. Rosenheim, O., and Webster, T. A.: J. Soc. Chem. Ind. **45**: 932 (Dec. 10) 1926.

22. Heilbron, I. M.; Kamm, E. D., and Morton, R. A.: Biochem. J. **21**: 78, 1927.

23. Koch, Elizabeth M.; Cahan, M. H., and Gustavson, R. G.: J. Biol. Chem. **67**: lii (Feb.) 1926.

24. The following derivatives were tested and failed of activation: β-cholesterol, heterocholesterol, α-phytosterol; cholesteryl chloride, cholesteryl amin-acetate; cholesten, pseudocholesten; cholesterilen; cholestan-4-7 diol; cholestan 4-on 7-ol; cholestenon; stigmasterol; α-amyrol; cholesteryl-ether; cholesterol dibromide; cholesterol ozonide (nonirradiated and irradiated); apocholic acid (Proc. Soc. Exper. Biol. & Med. **24**: 171 [Nov.] 1926). György, Jenke and Popoviciu reported that cholestanole, cholic acid and hydrated products deprived of double bonds could not be activated (Jahrb. f. Kinderh. **112**: 35 [March] 1926).

25. Hess, A. F.: Yeast and Wheat Embryo in Scurvy, Am. J. Dis. Child. **13**: 98 (Jan.) 1917.

BROMIDE INTOXICATION *

FURTHER STUDIES

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In two recent publications [1] the results of studies on the mechanism of bromide intoxication, or so-called bromism, were set forth. In these studies the following points were established with their experimental evidence:

1. Ingested bromide was with difficulty passed through the renal epithelium.
2. Salts of bromine tend in consequence to be stored up in the tissues of the body.
3. Bromide displaces the chloride ion in the body, the ingestion of the former leading to rapid elimination of the latter, with consequent chloride deficiency.
4. In cases of bromide intoxication, the intravenous injection of physiologic sodium chloride solution leads to the liberation of the bromide from the tissues, occasionally accompanied by a sharp renal irritation.
5. The replacement of bromide in the tissue by chloride immediately favorably influences the symptoms of bromism, notably those in the nervous system and in the skin, causing their rapid involution.

During the past two years eight more cases of bromide intoxication have been studied, and I am now able to add these to the existing evidence of previous observations, as well as to report an easy method for the detection of bromide in body fluids.

In our previous work we were hampered considerably in doubtful cases by the absence of any good method for the detection of bromine in tissue fluids, notably in the presence of chlorine. The test used by us in our previous communications consisted in the liberation of free bromine from the suspected tissue by the addition of potassium permanganate crystals and concentrated sulphuric acid. In this operation both chlorine and bromine are driven off. When large quantities of bromine were present, the latter could be detected at times by the visible brown vapor, and also by the sense of smell. When bromine was present in small quantities, the gas could not be seen, and its differentiation from chlorine by smell was exceedingly difficult owing to the similarity in odor of the two gases.

Recently one of my associates (G. H. Belote) has applied to these studies a very simple modification of a test for the detection of bromine which, besides being applicable in the presence of chlorine, is so sensitive that, in urine, bromine can be detected in solutions of 2 mg. per hundred cubic centimeters (1:50,000). This test is originally found described in Fresenius' text book on chemistry, and has been modified by Belote as follows:

The bromine is liberated as before in the suspected tissue fluid (urine, blood, spinal fluid, saliva and gastric content) by the addition of a few crystals of potassium permanganate and a few drops of concentrated sulphuric acid. After the test tube has been agitated, a small strip of filter paper impregnated with fluorescein and moistened with dilute acetic acid is held to the mouth of the test tube. The escaping bromine immediately combines with the fluorescein to form eosin, giving a bright pink color on the test paper in contrast with the lemon yellow color of fluorescein.

The presence of chlorine, which is liberated at the same time, instead of interfering with the test, apparently makes it more sensitive.

By the application of this method we have been able not only to corroborate the diagnosis of doubtful cases of bromism in which the bromide exanthem was present, but also to establish definitely the etiology of toxic psychoses without skin lesions in which ingested salts of bromine were the insult.

The importance of this test as a diagnostic procedure is evident when it may be added that in two psychotic patients the lesions immediately cleared up with the establishment of the bromide etiology on the intravenous administration of physiologic sodium chloride solution.

Of the eight cases lately under my observation, three were cases of toxic psychosis induced by the ingestion of salts of bromine. In two cases there was associated bromide eruption. The detection of bromine in the urine and in all the tissue fluids was made in one case by the new method. In the other two cases the diagnosis was established by the previous method of detection.

In the case in which an exanthem was not present, studies were undertaken with the various body fluids to determine whether bromine could easily be detected elsewhere than in the urine. In this patient the test for bromine was determined not only in the urine but also in the spinal fluid, blood, sputum and gastric content.

Of the three psychotic patients, two received repeated injections of sodium chloride solution in doses of from 100 to 400 cc. with rapid recovery from both mental and cutaneous symptoms. In one patient we were able to confirm our original observation that, following the initial dose of sodium chloride solution, marked accentuation of existing cutaneous lesions occurred and a few new ones appeared. Subsequent injections of physiologic sodium chloride solution caused their rapid involution.

The remaining five cases showed bromodermas without mental symptoms. Three occurred in epileptic patients who had taken salts of bromine for the control of the convulsions. The remaining two occurred in patients taking bromide for other causes—insomnia in one and headache with erythema nodosum in the second.

In the group of epileptic patients, I was again able to substantiate our earlier observations that there is no apparent relation between the size of the dose taken, or the length of time the drug has been used, and the appearance of the exanthem. In one case the eruption followed immediately the ingestion of the bromide; in the second the drug had been taken two weeks, and in a third the eruption occurred after the drug had been used intermittently over a period of fifteen years.

In this group of five cases without mental symptoms, bromine was found in all in the urine. In one case bromine was present in such quantities that it could be seen as a brown gas; in two cases it could easily be detected by the sense of smell, and in the remaining two cases which were recently seen the gas was easily demonstrated by the fluorescein paper test.

Of this group only one patient remained long enough to be treated by sodium chloride injections. This patient had simultaneously both bromodermas and ery-

* Studies and Contributions of the Department of Dermatology and Syphilology of the University of Michigan Medical School, Service of Dr. Udo J. Wile.

* Read before the Section on Dermatology and Syphilology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 18, 1927.

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thema nodosum. The existence in this case of a septic temperature could probably be ascribed to the latter condition. A coexisting albuminuria so readily disappeared with the disappearance of the bromide exanthem following the treatment by intravenous physiologic sodium chloride solution that it seems quite likely that the renal irritation was a part of the bromide intoxication. Following the injection of 300, 400, 450 and 500 cc. of physiologic sodium chloride solution in this case the bromodermas rapidly involuted. The albuminuria cleared up also, but the septic temperature and the erythema nodosum persisted.

CONCLUSIONS

1. Further observations confirm those expressed in the earlier studies from this clinic as to the great value of physiologic sodium chloride solution injected intravenously in the treatment of bromide intoxication.
2. Both the mental and the cutaneous effects of bromide intoxication are rapidly and favorably influenced by this treatment.
3. The initial dose of sodium chloride solution should not be of more than from 100 to 150 cc. If well tolerated, this may be increased to from 300 to 400 cc., given twice weekly.
4. The introduction of physiologic sodium chloride solution results in a rapid elimination of the bromide, with occasional renal irritation.
5. A convenient method for the determination of bromine in body fluids has been developed which is of great value in establishing the diagnosis both in frank and in doubtful cases.

ABSTRACT OF DISCUSSION

DR. GEORGE H. BELOTE, Ann Arbor, Mich.: I am sure you will be interested in the chemistry of the test. Fluorescein is $C_{20}H_{12}O_5$. Eosin is $C_{20}H_8Br_4O_5$. When bromide is added, the result is at once visible. In this case, the solution is fairly well known and to that we add potassium permanganate crystals and sulphuric acid. We do not believe that the amount is material, except that it should be in excess. Fluorescein paper is then moistened either with water or with 2 per cent acetic acid, whereupon it immediately becomes pink.

DR. WILLIAM H. GUY, Pittsburgh: The introduction of this new test for bromine gives us something which is not only reliable but in which there can be no question about the reaction obtained, it is so clean cut. I had some difficulty when I first used the test apparently because the paper Dr. Wile mailed me deteriorated in transit. Then I made a fresh supply of paper and ran through about 300 comparative tests, under the direction of Drs. Koch and Judd of the department of pharmacy of the University of Pittsburgh. I could not locate any chemical that would give a false positive. Excess chlorides, which are sometimes present, only make the test more sensitive. Iodine does not interfere. It is exceedingly sensitive. One point we should stress is that fluorescin and fluorescein are different chemically but in solution they become the same product. In preparing paper it may be used in various strengths. I started it by using 1 per cent, and then after reading Fresenius' original article on the subject I cut this down to 0.04 per cent. The paper may be soaked in from 50 to 60 per cent acetic acid and dried for future use, at which time it is only necessary to moisten it or it may be moistened with the acid at the time the test is made. Dr. Jacob and I have had approximately twenty cases to date, seven of which occurred in young children. In the latter Dr. Wile's treatment proved as efficacious as in the adult cases. Perhaps too much stress has been laid on miraculous results. Such is not always the case. Response may be somewhat slow; it is not to be expected that one treatment will give results. Treatments must be continued. Further, too large a dose of sodium chloride should not be used early in the treatment on account of the likelihood of scratching the kidneys in the course of eliminating large quantities of bromine. We do not hesitate to use intravenous injections in infants in the median basillic or the jugular veins or even through the fontanel. It is conceivable that in a long standing bromoderma the urine may be entirely negative for the bromine. Further, finding bromine in the urine does not prove that the eruption present is due to bromine. Clinical judgment must be used in connection with it. A further use for the test is in testing samples labeled "chemically pure sodium chloride." One sample was found to contain a trace of bromine.

DR. HAROLD N. COLE, Cleveland: We have found that if we treat all these areas with the roentgen ray in addition to the saline solution, the irradiated lesions will disappear twice as fast as those that are not. It is also a question whether giving salt by mouth in a certain number of mild cases is not of value.

DR. JOSEPH J. ELLER, New York: Last March, Dr. MacKee presented a case in which it was necessary to keep the patient under a sedative, as he was an epileptic. Phenobarbital did not seem to control the attacks. That man had a complete irradiation of the lesions by the ingestion of a teaspoonful of sodium chloride by mouth daily. Taking the salt by mouth daily while under bromide therapy prevented bromide eruptions and other undesirable effects.

DR. PAUL E. BECHET, New York: Bromoderma sometimes used to last for months, withstanding the most strenuous treatment. Now it is only a question of weeks to bring about a cure. Regarding the administration of salt by mouth, I had a patient with bromide acne who was taking bromide by mouth for a gastric disturbance. The lesions had been present for three or four weeks, but they cleared up entirely after the oral administration of sodium chloride in drachm doses, two or three times a day. My experience with the intravenous administration of saline solution in bromoderma fully corroborates the observations of Dr. Wile, and the excellent therapeutic results attained.

DR. LESTER HOLLANDER, Pittsburgh: The intravenous use of salt solution is not practical in all types of cases, and for those I would suggest the use of sodium chloride by mouth. Large quantities may be given if a sodium chloride tablet coated with phenyl salicylate is given, as this passes through the stomach and does not become dissolved until it reaches the small intestines. I also apply sodium chloride compresses locally to the lesion.

DR. EVERETT S. LAIN, Oklahoma City: I wish to ask Dr. Wile whether it is possible, and how frequently he sees similar eruptions caused by phenobarbital and other substitutes for bromide. Also, whether this treatment is of any value in such cases. I have seen several cases of similar eruptions which I thought were due to substitutes which are now frequently given in place of bromides.

DR. UDO J. WILE, Ann Arbor, Mich.: I have had practically the same experience that Dr. Cole had in finding that the roentgen ray is extremely useful in conjunction with the injection of salt solution. With regard to the ingestion of salt, this is nothing new because probably all who have followed the treatment of epileptics in epileptic colonies know that patients are given large amounts of salt each day in order to keep them from becoming stuporous while taking bromides. The objection to giving the salt over long periods is that it is quite unpleasant, and I think it may contribute to hyperacidity. As with the other drugs that are administered intravenously, the action is much more prompt in this way. This work has to do solely with the halogen group. I do not think that the substitutes for bromide would be in the slightest way influenced unless they contain some salt of bromide. In regard to the failure to find bromine in long standing cases, if one suspects a bromoderma in a large nodular eruption and the test for bromide in the urine is negative, the proper procedure is to give the patient chloride and to continue examining the urine; this procedure will certainly shake it out if it is present.

POLYCYTHEMIA IN FEATHER DYERS*

EUGENE S. KILGORE, M.D.
SAN FRANCISCO

The case reported here is of a man, for many years a feather dyer, whose habit it was to test his dye solutions by tasting, who for some time preceding his death from coronary thrombosis showed a marked increase of red corpuscles. He had exhibited cyanosis long before the polycythemia was first noted (1919). During his last period in the hospital there came to visit him a young woman, Miss M. D., who, we discovered, had also suffered polycythemia (12,400,000 at one time), and whose improvement following irradiation and benzene treatment had been reported by Hurwitz and Falconer.[1] She had given them (in 1915) her occupation as milliner, but further inquiry now (July, 1919) brought out the fact that she had in reality also engaged extensively in the dyeing of feathers, having been an active associate in the business with our patient from about 1912 to 1916. With this exception, the report by Hurwitz and Falconer nine years ago contains a complete account of her case up to that time. The onset of dizziness, etc., described by them dates from about or shortly after the time she began feather dyeing. Since then, Dr. Falconer informs me, her health has remained excellent and a complete blood count obtained by him a few weeks ago was normal. Following about 1916, when she received benzene and irradiation treatments, her work as feather dyer became less frequent, and it ceased entirely three years ago.

Inquiry now develops the fact that whimsical fashion has all but extinguished the feather business, so that only one dyer is still following the trade in San Francisco. He is a middle aged Japanese, who has been in the work a number of years but has never made a practice of tasting his dyes. He looks and feels well, but the blood sample he permitted us to take shows a red count of 6,040,000, white count 7,850, and hemoglobin 70 per cent (Tallqvist). Two others who did feather dyeing several years ago have been traced. Both state that they had good health during and subsequent to their work with dyes, but it was not possible to secure blood counts.

Including the case here reported and that reported by Hurwitz and Falconer, the records of the University of California Hospital show only twelve cases of polycythemia since 1913. Eight have been traced; four are lost. Of the latter, the blood condition was attributed to congenital heart disease in two, to tricuspid insufficiency in one, and to chronic asthma and emphysema in the fourth. Of those traced, two were the feather dyers mentioned above. A third has died of tuberculosis, and his family state that although he never had industrial contact with dyes he did dye his hair black for a number of years; the nature of the dye is unknown. A fourth died of myocarditis (his physician believes there was no dye contact). A fifth (who has nephritis and hypertension) is improved and states that he has never come in contact with dyes. A sixth is improved (has thrombo-angitis obliterans) and never used dyes. The other two both had congenital heart disease and have since died.

If, therefore, the cases of congenital heart disease, tricuspid insufficiency and emphysema are excluded, there remain but six cases, of which two were the feather dyers and one the man who frequently dyed his hair. These facts, together with the finding of more than 6,000,000 red cells per cubic millimeter in the only remaining feather dyer in San Francisco, make it necessary to regard the chemical contacts in these cases as more than coincidental.

Several poisons encountered in industry have been credited with causing at times increased numbers of red corpuscles. Egdahl,[2] Apfelbach[3] and others have reported high counts in workers exposed to carbon monoxide gas; Tyson and Schoenberg[4] have reported the same in chronic methyl alcohol poisoning; Hamilton[5] quotes G. R. Minot as finding polycythemia in workers exposed to ether fumes; and Malden[6] found six of thirteen workers in aniline fumes to have a red count of more than 5,000,000—the highest, however, was 5,680,000.

Chemical substances used by feather dyers include a large number of aniline dyes as well as oxalic acid, trinitrophenol and other acids, potassium bichromate and other salts, etc.

A complete list of chemicals used by the two feather dyers mentioned was obtained from the private compilation of formulas of Mr. C. M. and is appended to his case report which follows. Those marked with a star are also used by the Japanese referred to as the only remaining feather dyer in San Francisco, who also has a high red count. He also uses from time to time a number of dyes (mainly aniline) not on this list.

With the data at hand it is impossible to do more than hazard a guess that some of the coal tar derivatives are responsible for the blood changes in these three feather dyers and perhaps also in the man who often dyed his hair. Cloth dyers should be investigated. Those who have spent years in actual contact with the dyestuffs are not numerous in San Francisco and for the most part work in institutions whose managers are unwilling to allow investigation for fear of creating labor discontent. One German who has spent seventeen years in working with aniline and other dyes appears healthy and has a normal blood count. It is suggested that the feather dyers' practice of shaking feathers in the air after immersion in the vats may give them an atmospheric droplet exposure that does not occur in other branches of the dye industry.

The mechanism by which the polycythemia is produced is of course also obscure. That the increased production is a secondary effect of long continued blood destructive action is suggested by Hudson.[7] In the case reported it will be noted that polycythemia was not found two years before the patient's death. If this suggestion is correct it would probably preclude the therapeutic use of the responsible chemicals for stimulating blood production; but, on the other hand, it is possible that the stimulation of blood formation is a primary or predominant effect of one or more of the dyes and that these might be of therapeutic value. The subject evidently merits much further study.

REPORT OF CASE

History.—C. M., a German, aged 61, was admitted to the medical service of the University of California Hospital, June 24, 1919. The previous entry, in November, 1917, also

* From the Department of Medicine, University of California Medical School.

1. Hurwitz, S. H., and Falconer, E. H.: The Value of Roentgen Rays and Benzene in the Treatment of Polycythemia Vera, J. A. M. A. **70**: 1143 (April 20) 1918.

2. Egdahl, Anfin: Chronic Carbon Monoxide Poisoning, J. A. M. A. **81**: 282 (July 28) 1923.

3. Apfelbach, in Kober and Hanson: Diseases in Occupation, Philadelphia, 1916, p. 43.

4. Tyson and Schoenberg: Arch. Ophth. **44**: 275, 1915.

5. Hamilton: Industrial Poisons in the United States, New York, 1925.

6. Malden: J. Hyg. **7**: 672, 1907.

7. Hudson, W. G.: M. Rec. **91**: 68 (Jan.) 1917.

supplies part of the data. The family history was unimportant. He had had gonorrhea several times when young, pneumonia at 40, pleurisy at 48 (3 quarts of fluid removed) and inflammatory rheumatism at 54 (in bed eleven weeks). His habits were ordinary; he was not alcoholic. He was a feather dyer for many years. His associates state that he had the habit of gaging dye solutions by tasting.

The principal complaint was abdominal pain, present off and on for twenty years, usually a dull, diffuse ache throughout the central abdomen, worse three or four hours after meals and usually relieved by food. There was some pyrosis. Three years previously and again within a few weeks there had been unusually severe abdominal pain for several days, which was increased by eating. This was knifelike, high in the epigastrium and under the ensiform cartilage, but it did not radiate. At no time was there nausea, vomiting, jaundice, melena or diarrhea. Urination occurred once or twice at night. There were no attacks of fainting, but occasionally he was dizzy while standing. There had been some cough in the last two or three weeks only, but no weight loss. There were occasional night sweats. There had been hemoptysis in 1917.

Examination.—The patient was of average build and weight. There was considerable cyanosis of the ears, lips and nose (also noted in the hospital record of 1917). He was nervous but not very sick looking. The left pupil was slightly irregular in outline. The right apex was moderately dull down to the midscapular region, with prolonged expiration and harsh breathing and questionable amphoric breathing to the right of the second dorsal vertebra. There were no râles. There was embryocardia with muffled heart sounds. The systolic blood pressure was 110; diastolic, 65. A smooth, hard, nontender liver edge was felt 4 cm. below the costal margin. A hard, nontender spleen edge was felt 2 cm. below the costal margin. There was slight epigastric deep tenderness. The left testis was soft, atrophic and slightly tender. Examination otherwise was negative. There was no clubbing of the fingers. Notes of the 1917 admission were essentially the same, but there had not been splenic enlargement.

July 3, during defecation, he experienced for the first time terrific pain in the chest, as if an iron band were about the chest. The heart sounds were found rapid and muffled but regular, the pulse rapid and of low tension, the veins of the neck distended, apparently from straining and holding his breath in an effort to relieve the pain, and general cyanosis was increased. An amyl nitrite pearl gave almost immediate relief and in a few minutes he began to perspire, but in fifteen minutes the pain returned, to be relieved again in about five minutes by 0.0012 cc. of spirit of glyceryl trinitrate.

In the next ten days there was no severe pain, but then (July 14) the patient felt very nervous in the afternoon and had a presentiment that more pain was impending. That evening, on returning to bed after an easy defecation, he was seized with a very severe "boring" pain in the region of the manubrium, going through to the midback and accompanied by an aching sensation in both arms. There was no sense of constriction or suffocation this time, but the pain was so severe that he feared heart failure and death. Apparently there was some relief from amyl nitrite, but not as definite as before. A fair degree of relief followed an injection of spirit of glyceryl trinitrate. He had a poor night and next morning expressed doubt about the relief he had had from the amyl nitrite inhalations.

At 3 o'clock next afternoon while lying quietly in bed he suffered another attack of severe pain, this time in the epigastrium and not radiating. This pain he described as severe and steady, with occasional more severe exacerbations. Amyl nitrite now did not give relief and he was given morphine. At 6 p. m. another severe attack of pain occurred, this time extending all over the chest and both arms; it lasted ten minutes, with increased cyanosis and very anxious facies. The blood pressure during this attack was 100 systolic and 65 diastolic.

In the following ten days before his death several less severe attacks of pain recurred, at one time a slight dull ache in the epigastrium, at another a dull ache and pain over the region of the spleen. The physical signs remained essentially unchanged except for the onset of auricular fibrillation (July 21), when the systolic blood pressure was 90, and a small amount of fluid at the left base two days before the end. He died quietly during sleep, July 26.

Laboratory Examinations.—Urine examinations were for the most part negative except for an occasional slight trace of albumin and a few leukocytes, and, toward the end, a few granular and hyaline casts. Urobilin and urobilinogen were present, July 17, but not on several examinations before and after this date.

Roentgen-ray examination of the chest showed a somewhat widened aortic arch, a cloudy right apex, and apparently some fixation of the right diaphragm. Gastro-intestinal roentgenograms were negative. Sputum examinations were negative for tuberculosis.

The temperature was normal or subnormal at all times; the respiration varied from 20 to 28; the pulse rate at various times averaged from 100 to 115.

Chemicals Used in Feather Dyeing

Dyestuffs.	Natural dyes (organic)
"Aniline dyes"	Logwood liquor (hematoxylin)
Oxyketone group	Archil (Cudbear)
Alizarine dyes	Turmeric (curcumine)
Azo group	Cochineal (carmine)
Monazo group	Redwood Brazil
Mandarin	Camwood (sandalwood)
Coccine	Quercitron
Coccinine	*Fustic
Acme yellow	Flavine
Diazo group	Sumac
Bismarck brown	Anatta
Azine group	Green walnut husks
Induline	Hypermic?
Nigrosine	Fustet?
Safranine	Redarine?
Diphenylmethane group	Metallic salts
Canareine (auramine)	Victoria green (chromium)
Triphenylmethane group	Bluestone (copper)
*Methyl green	*Potassium bichromate
Guinea green	*Potassium permanganate
New green	Iron pyrolignite
Cotton blue	Copperas (iron sulphate)
Cloth blue?	Tin chloride
Thiazine group	*Other chemicals used.*
*Methylene blue	Sodium bicarbonate
Xanthone group	*Sodium bisulphate
*Rhodamine (carthamine)	Sodium sulphate
Quinoline group	Sodium hypochlorite
Quinoline yellow	*Ammonium hydroxide
Indigo group	Potassium bitartrate
Indigo (natural?)	Potassium aluminum sulphate
Indigo (synthetic?) powder	Sodium potassium tartrate
Indigo sulphate?	Calcium carbonate
Indigo carmine	*Acetic acid
Picric acid	*Oxalic acid
	*Tartaric acid
	Tannic acid (tannin)
	*Sulphuric acid
	Sulphurous acid
	*Hydrogen peroxide

Gastric lavage did not show any residue, and gave about average curves for free hydrochloric acid and total acidity. Stool examinations were negative for parasites and occult blood.

Blood examinations were as follows:

Nov. 26, 1917: Hemoglobin, 90 per cent; erythrocytes, 4,416,000; leukocytes, 16,000; polymorphonuclears, 89 per cent; small lymphocytes, 6 per cent; large lymphocytes, 5 per cent.

June 6, 1919: Hemoglobin, 90 per cent; erythrocytes, 6,320,000; leukocytes, 9,400; polymorphonuclears, 90 per cent; small lymphocytes, 9 per cent; large lymphocytes, 0; eosinophils, 1 per cent.

July 2, 1919: Erythrocytes, 5,780,000.

July 14, 1919: Erythrocytes, 8,000,000; leukocytes, 13,000 (after chest and epigastric pain).

July 15, 1919: Erythrocytes, 8,000,000 (same from ear and toe).

July 16, 1919: Erythrocytes, 7,089,000; leukocytes, 15,300 (four hours after 300 cc. venesection).

July 17, 1919: Erythrocytes, 9,100,000; leukocytes, 20,000; polymorphonuclears, 95 per cent; small lymphocytes, 3 per cent; large lymphocytes, 0; eosinophils, 1 per cent; basophils, 1 per cent.

July 19, 1919: Erythrocytes, 7,000,000.

July 23, 1919: Erythrocytes, 6,832,000; leukocytes, 31,150.

July 25, 1919: Erythrocytes, 6,096,000; leukocytes, 23,250.

July 17, 1919, by the gasometric method, blood from the arm, hemoglobin was 193,6 per cent (normal by this method, about 120); oxygen carrying power, 35.89 per cent by volume; oxygen content, 23.72 per cent by volume; oxygen absorption, 12.17 per cent by volume.

July 17, fragility tests revealed: initial hemolysis, 0.400; complete hemolysis, 0.250.

July 19, the blood volume was as follows: first sample taken at 3:40 p. m. with patient's temperature 36.4 C. (97.5 F.). At 3:45 p. m., 1¼ of 1 per cent brilliant red injected. At 3:47 p. m. second blood sample taken. Blood volume, 8,951; plasma volume, 910; total blood cell volume, 6,041; hematocrit, 67.6. At 3:54 p. m. third sample taken. Blood volume, 9,060; plasma volume, 3,890; total blood cell volume, 6,170. Hematocrit, 68.1.

Autopsy Diagnosis.—Thrombosis in left ventricle of the heart with chronic fibrous myocarditis and dilatation of heart; embolism of the right coronary artery, of the spleen, and of the kidneys. Chronic fibrous tuberculosis of the right apex. Left sided fibrous pleurisy. Hyperplasia of the marrow of the long bones (erythroblastic).

The chemicals used in feather dyeing were copied from his private book of formulas, and are listed in the accompanying tabulation. Dr. John Sampson kindly arranged the chemical grouping, but the letter and number suffixes of the dyes were not procurable. Those marked with a star are also used by the Japanese dyer referred to.

490 Post Street.

THE MEDICAL CURE OF DUODENAL ULCER *

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Chronic peptic ulcer is now recognized as a frequent malady, and is responsible for the symptoms in nearly 10 per cent of any large series of patients complaining of persistent or recurring indigestion. Early methods of diagnosis were so faulty and treatment so unphysiologic that the medical aspect of peptic ulcer was soon completely overshadowed by brilliant surgical studies in the recognition and treatment of the disease. In the last ten or twelve years, however, there has been a growing dissatisfaction with the large proportion of surgical failures and the incidence of chronic invalidism following operative treatment.

INEFFICIENCY OF SURGICAL TREATMENT

In the surgical treatment of peptic ulcer one has to consider not only an immediate operative mortality rate varying from 2 to 10 per cent, but also the frequent occurrence of secondary gastrojejunal ulceration, the almost inevitable perigastric adhesions, the somewhat less common kinking and obstruction of the intestine and the absence of any assured immunity from subsequent hemorrhage, perforation and malignant degeneration. The inefficiency of surgical treatment is further shown in the constant trend toward more radical procedures. Gastro-enterostomy was succeeded by pyloroplasty; then followed various forms of pylorectomy and excision, and in the last few years an increasing number of surgeons have been performing a subtotal gastrectomy with complete exclusion of the ulcer bearing area in the stomach and duodenum. This radical operation precludes the possibility of peptic ulcer but also removes the acid-secreting portion of the stomach necessary for normal digestion. The advocates of subtotal gastrectomy have shown that gastric anacidity is found after this operation in more than 80 per cent of the cases. In the absence of immediate disability, they overlook the fact that persistent achlorhydria is ultimately followed by undesirable changes in the bacterial flora of the intestines, and that such individuals are potential candidates for pernicious anemia, subacute degeneration of the spinal cord, and other less obvious toxic states.

Glaring discrepancies are immediately encountered when one studies the published statistics of end-results from various surgical clinics. My personal experience is completely in accord with the reported evidence from a large metropolitan clinic to the effect that a permanent cure after gastro-enterostomy was secured in less than 50 per cent of the cases, and that secondary gastrojejunal ulceration occurred in 34 per cent. The fact has been further emphasized that in some clinics the patients complaining of distressing symptoms following surgical treatment for peptic ulcer almost approach in number those suffering from untreated gastric and duodenal ulcer.

If it is admitted that gastro-enterostomy for peptic ulcer is unsuccessful in a large proportion of patients and that more radical surgical procedures jeopardize the future health of the individual, the alternative of medical treatment should be conscientiously considered in every case. One is inclined to question either the intelligence or the motives of the surgeon who operates immediately after a roentgen-ray examination shows a filling defect in the duodenal bulb, almost before the barium has been expelled from the intestinal tract. On the other hand, immediate surgical intervention is indicated, of course, in acute perforation and should be deliberately undertaken in pyloric stenosis, in most instances of penetrating ulcers, and in those associated with perigastric adhesions. Until more is definitely known of the real incidence of malignant degeneration, many physicians will continue to recommend surgery in obvious gastric and prepyloric ulcers. Patients with frank hemorrhage due to peptic ulcer have inevitably better chances of recovery on proper medical treatment than when submitted to operation.

MEDICAL TREATMENT OF DUODENAL ULCER

Peptic ulcer occurs much more frequently in the first portion of the duodenum than in the stomach. In many instances, it is uncomplicated either by periduodenal adhesions or by disease in the appendix or gallbladder, as can be satisfactorily determined by competent roentgen-ray studies after a barium meal and by the almost exact information rendered by cholecystography. Certain of these duodenal ulcers undoubtedly undergo spontaneous healing, as evidenced by the indurated scars found at necropsy in any large hospital service. From personal observation extending over more than fifteen years in a comparatively large series of private patients, I am thoroughly convinced that practically every case of uncomplicated duodenal ulcer is curable by adequate medical treatment. In actual practice, however, only about 50 per cent of the patients are permanently cured, but a study of the recurrences shows that the individual failed to carry out his treatment regularly or for the prescribed length of time. In addition, no other condition, unless it is malaria with its prompt response to quinine, gives such an immediate therapeutic test; and if the patient is not relieved of symptoms in a week, one is not dealing with an uncomplicated duodenal ulcer.

The principles of the adequate medical treatment of duodenal ulcer are based on the methods succinctly

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laid down by Bertram Sippy in 1912 and again in 1915. Experience has suggested certain modifications and, in addition, special attention is given to a particular insistance on the details and regularity of the regimen, and to the duration of treatment. In most instances the patients are not hospitalized.

TREATMENT OF DUODENAL ULCER

1. *Frequent Feeding.*—The most important part of the treatment is to secure the buffer effect of the food by frequent feeding. In patients with acute pain and marked pylorospasm, the ideal food is 2 ounces (60 cc.) each of cream and sweet milk, to which is added 10 grains (0.65 Gm.) of sodium citrate, given once every hour from 7 a. m. to 9 p. m. In the average instance of chronic duodenal ulcer, however, six feedings a day suffice, and the patient is instructed never to go more than three hours while awake without putting food into the stomach. The food between meals and at bedtime may consist of a glass of sweet milk or a milk-shake with egg. When this is not convenient, a good substitute is cream cheese with crackers and butter.

2. *Diet.*—Except for the acute cases and those in which there is hemorrhage, the patient is given a liberal diet, and it should be explained to the individual with a chronic duodenal ulcer that he does not have "indigestion" but rather too much digestion. These patients are told to eat a general diet with the exception of seven types of food which are to be avoided: (1) all acids, such as vinegar, pickles and sour foods; (2) raw fruits, especially apples, grapes and citrus fruits; (3) soups and meat extractives; (4) condiments and spices, such as an excess of salt, and pepper, mustard and horseradish; (5) intense sweets, such as honey, molasses and candy; (6) very coarse foods, as nuts and corn, and (7) alcohol in every form, but especially sour wines, cider and grape juice. The best food for patients with ulcer is fat, such as cream, butter and olive oil, and the next best food is albumin in some form, and they are told to partake freely of milk, eggs and all kinds of cooked meat.

3. *Belladonna.*—The third item in the treatment, which may not be essential but certainly appears to be helpful and indicated, is the administration of atropine or belladonna. In my series, this is given in the form of the tincture of belladonna, 10 drops in water three times a day before the regular meals. This tends to release pylorospasm and hyperperistalsis, and possibly reduces the total acid secretion of the gastric glands.

4. *Bismuth.*—After the three regular meals, and again at bedtime, the patient is given a level teaspoonful of bismuth subcarbonate. If this should be constipating, a small amount of heavy magnesium oxide may be added. Sodium bicarbonate is not used, and careful observation has never shown an instance of alkalosis during treatment.

5 *Duration of Treatment.*—The treatment must be carried out regularly and persistently over a period of two years. If omitted for one or two days, it is conceivable that the healing of the ulcer may be delayed thirty days or more.

6. *Control of Patient.*—This is undoubtedly the most difficult part of the treatment. Failures of medical therapy with recurrence of symptoms are inevitable if the patient becomes at all careless or forgetful, or considers himself cured because of the prompt relief from suffering. The number of medical cures is largely in proportion to the intelligence of the patient and the painstaking explanation of the physician for each part of the treatment, with insistance on punctuality of feedings and absolute regularity of the regimen. As a control and check on the treatment, the patient is instructed to report once each six months for the two year period. Each time this is done the patient is again roentgenographed by the same roentgenologist who made the original study. Six months after treatment is instituted, the deformity in the duodenum may have disappeared. In other instances, the outlines of the defect are found to be smoother, gastric hyperperistalsis has decreased, and hypermotility has diminished. Treatment for the full two years is continued regardless of the improvement noted on roentgen-ray examination. Five such examinations are made during the two years' treatment, and it is a rare observation not to see the ulcer deformity either disappear or undergo a decided change in appearance compatible with a healed scar. These interviews with each patient at intervals of six months give the physician the opportunity to review the principles of the treatment and to emphasize the absolute necessity of strict adherence to the details involved.

7. *Subsidiary Treatment.*—This consists in the attempt to correct any other physical impairment, with special emphasis on the removal of chronic foci of infection in the tonsils, sinuses and about the teeth. Cases of concurrent chronic appendicitis and chronic cholecystitis are treated surgically before the ulcer treatment is instituted but, with the consent and knowledge of the patient, the cooperating surgeon is instructed not to perform any operation on an otherwise uncomplicated duodenal ulcer.

8. *Subsequent Care.*—At the expiration of two years, all medication is discontinued. The patient is told he may eat what he wishes, except that he should avoid acids, intense sweets, an excess of condiments, and especially cider, grape juice and sour wines. It is also advisable that a patient with a healed duodenal ulcer should not go too long without food, and many patients continue to eat between meals and at bedtime although not with the exact regularity required during the period of treatment.

RESULTS OF MEDICAL TREATMENT

My experience with the medical treatment of uncomplicated duodenal ulcer has been most gratifying. Considerably more than half the patients have not only secured immediate relief but remained well and free from symptoms after the two year period is completed. The opportunity has been offered of making studies and roentgen-ray examinations of certain of these patients seven and eight years after the treatment was discontinued, and evidences of recurrence have not been found.

In a second relatively large group of patients, the treatment affords such prompt relief that they are unwilling to continue it in the absence of symptoms. Recurrence of the ulcer syndrome is almost inevitable; temporary relief is again secured by resuming treatment, but the patient drifts along until some complication occurs and operative intervention becomes necessary or imperative.

In a third group, which is indeed a small one, treatment affords only partial relief or no change at all in the symptoms. Further study invariably discloses the fact that such patients have a duodenal ulcer that is not uncomplicated, or that an actual mistake in diagnosis has occurred, as, for instance, in certain cases of chronic gallbladder disease with adhesions involving the duodenum.

SUMMARY

In the current literature, the statement is made not infrequently that medical treatment of peptic ulcer is fraught with much danger. In my whole experience with the method as outlined, I have never known of an instance of either hemorrhage or perforation during the period of treatment. One patient under observation ten years ago died from repeated hemorrhages, but at that time the exact details of the treatment had not been formulated.

The principles involved in the treatment here advocated are not new or unusual. The successful results would seem to depend chiefly on the intelligent cooperation of the patient that follows an unhurried, painstaking explanation by the physician for each part of the treatment; on the insistence that the treatment must be carried out each day with peculiar regularity and persistence, and, finally, on the extension of duration of treatment over the full two year period.

The medical literature dealing with peptic ulcer is extensive and much of it is available. For this reason it seems unnecessary to refer to the current expressions of the many writers on this subject. In the series of patients on whom this report is based, I am especially indebted to the painstaking roentgen-ray studies of Drs. Daniel D. Talley and L. J. Whitehead, and to the hearty cooperation of my surgical colleagues Drs. Murat Willis and Frank S. Johns, who have studied and followed many of the patients in the conviction that patients suffering from uncomplicated duodenal ulcer should have the benefit of adequate and carefully supervised medical treatment before the question of surgical procedures is considered.

501 East Franklin Street.

ABSTRACT OF DISCUSSION

DR. FRANKLIN W. WHITE, Boston: I am in close agreement with nearly all that Dr. VanderHoof has said. He has painted the surgical picture rather black. I see far more surgical cures, say 75 per cent, and fewer jejunal ulcers, say from 2 to 5 per cent. The Sippy type of treatment is generally used; the essentials are frequent feeding and a bland diet. I do not lay the stress on alkalis that Sippy did. Their use is not a principle but a convenience, especially with ambulatory cases at first, but I do not push them far. For this reason, the danger of alkalosis is unimportant. In using four or five Sippy powders a day for a week or so, and then diminishing them rapidly to two or three a day, I find practically no alkalosis, and see it only in the patients with marked pyloric stenosis, a group which is really surgical. In the diet, we need ride no hobbies. We need not feed everybody milk and cream whether they like it or not. There is no objection to cereal gruels, or egg and milk for variety. We have to consider the patient's taste. In the first hemorrhage, we all agree that medical treatment is vastly safer than surgical, and nine out of ten patients recover.

We know the diet, the drugs and the routine scheme of treatment; why do we not get better results in general medical practice? I think the chief mistake is in the follow-up treatment. The patients are deceived because their symptoms soon disappear; and the physician often gets careless and does not follow them up in a thorough way. Patients should report at regular intervals for a year or two until they are safe. We get about 60 per cent permanently well on medical treatment, about 20 per cent so well that they will not consider surgery, and about 20 per cent go to the surgeon after careful medical treatment.

Roentgen-ray evidence has definite value as an index of healing in lesser curvature ulcer. In duodenal ulcer it is much less definite because often scar tissue and adhesions deform the duodenum after the ulcer has actually healed. The days of making a roentgen-ray diagnosis of duodenal ulcer and of sending the patient at once to a surgeon are pretty well over. The better the surgeon, the less likely he is to operate immediately on an uncomplicated duodenal ulcer. The value of surgery is not in treating the whole group but in effecting a cure in many difficult cases.

DR. JOHN J. GILBRIDE, Philadelphia: I agree with a great deal that Dr. VanderHoof has said and I disagree with considerably more that he has said. We know that "practically 100 per cent" do not recover under medical treatment; at least, that is my experience. It is not a question of contest between the internist and the surgeon; it is a question of cure of the patient and which is the best means to accomplish that end. The successful treatment of duodenal ulcer cannot be carried out except by physicians who are familiar with this kind of work. After one has made a correct diagnosis of the presence of duodenal ulcer, one should determine whether the ulcer is one amenable to medical treatment, or whether surgery is indicated. The outstanding need is the cure of the patients by medical means if we can, and by surgery if we must. It is a recognized fact by those who have had sufficient experience in the management of this disease that a great many patients with duodenal ulcer get well under medical treatment. As a matter of fact, practically all these patients should receive medical treatment in an effort to cure the disease, except when definite surgical indications exist, as obstruction, bleeding and perforation, or when the disease has resisted medical treatment. It is difficult to have these patients carry out instructions. We know that unless they carry out the treatment in the manner in which we definitely and positively instruct them, we are not going to get satisfactory results, any more than we are going to get correct answers in mathematics or anything else.

As to the failures after surgery, a gastro-enterostomy does not terminate the case. Following gastro-enterostomy, the ulcer patient requires as much skilful treatment or even more, than he did before the operation. The patient cannot be operated on and then dismissed. He must be under the care of a physician who is competent; one who knows the functions of the stomach, and how to prescribe and enforce a diet. Otherwise disagreeable symptoms may occur and the operation may be blamed. As for alkalosis, I have not seen any of it in my experience of twenty-five or more years, and a large part of that time I have been connected with a clinic for the treatment of gastro-intestinal diseases.

DR. G. B. EUSTERMAN, Rochester, Minn.: The method of treatment proposed by the author should prove effective. In approximately 1,800 patients with chronic, acute or subacute peptic ulcer, including duodenitis, who come under our observation yearly at the Mayo Clinic, about 90 per cent of the lesions are duodenal. On an average, 55 per cent of the patients with duodenal lesions are submitted to operation, owing to the chronic and invariably complicated stage of the lesion when first seen. The remainder are given medical treatment for various reasons, such as the mildness of the complaint, the age of the patient, obesity, an unwillingness to submit to operation, or because of the presence of some coexisting complication which would seriously increase the surgical hazard. In about 75 per cent of the cases of chronic gastric ulcer operation is performed for the reasons already stated, in addition to the actual or potential factor of carcinoma. It is the rule, rather than the exception, for the deformity of the duodenal cap to persist after healing following either successful treatment or operation, whereas in early gastric ulcer the niche permanently disappears in the majority of cases after adequate treatment. This feature is of practical importance because in patients who have had gastro-enterostomies elsewhere and who subsequently come under observation with a persistence or a recurrence of their symptoms, the visualization of a normal cap implies, in the majority of instances, that there had not been a duodenal ulcer originally.

Like Dr. White, I disagree with Dr. VanderHoof concerning the end-results following operations by competent surgeons. I take it that the statistics presented were those from Mount Sinai Hospital in New York, and therefore are not representative, as they deal with a racial group which, in our experience, has an unusually high tendency to single or multiple recurrence of the ulcerative process. In a follow-up of 1,000 patients with proved duodenal ulcer ten years after

gastro-enterostomy, Balfour showed that 90 per cent were cured or satisfactorily improved. I might add that in our experience secondary operations for all types of sequelae following all types of operations for benign peptic ulcer are necessary in only 3 per cent. Based on a personal experience covering treatment of more than 600 patients, I should say that medical cure, with results satisfactory to the patient, presupposes hospitalization, adequate treatment, the enlistment of the complete cooperation of the patient covering a period of from twelve to eighteen months, and a thorough carrying out of all the details mentioned by the author. In the last few years we have found that the reduction of one fourth or even one half of the usual amount of alkalis effects neutralization more readily and more completely in the majority of cases, and at the same time avoids the dangers of alkalemia.

DR. J. N. HALL, Denver: One element in treatment has been omitted, namely, being sure of the diagnosis. In the last twenty years I have seen twenty or thirty cases in which various conditions have been found at operation which were not diagnosed before operation. They are sometimes diagnosed by some of the roentgenologists but not generally by clinicians, so far as I know. They make trouble and ought to be looked after. Incarceration of the pylorus in a Treitz hernia in one case led to a diagnosis of pyloric ulcer. Dr. Leonard Freeman and I have had six or eight cases of a shortened Treitz ligament, kinking the third portion of the duodenum and commonly suggesting ulcer. Several duodenal diverticula have been extremely puzzling.

If the patients do not do well, one ought to find out what pathologic condition is present in the abdomen. Spastic pylorus, without any lesion visible to the naked eye, may make trouble. One patient had such hemorrhages that we were on the verge of giving him a transfusion two or three times. We finally operated and found, not ulcer, but pure spasm of the pylorus. He gained 48 pounds (22 Kg.) in the next eight weeks and remained well, so I think that my statement that the pylorus was at fault is correct. Then we ought not to forget what happens with a bad gallbladder or bad appendix. I had one patient treated for ulcer twenty-five years and another one for twenty years in whom nothing was present but a chronic appendicitis. Those cases ought not to run on month after month, year after year, without the physician finding out what is wrong in the abdomen.

DR. SEALE HARRIS, Birmingham, Ala.: The physician handling ulcer cases should realize that he is dealing with a chronic condition. The Mayo statistics on ulcer average ten years of symptoms. Our statistics average five years. I had one patient with perforation who had a definite history of ulcer for thirty years. As to the modification of the Sippy diet, I do not think Dr. Sippy ever claimed that his diet was original with him. The Lenhartz diet for ulcer was published, in an article, in 1901, and von Leube and his followers claimed that Lenhartz was killing the patients by feeding them, and Lenhartz retorted that von Leube was starving his patients to death. Lenhartz received as much abuse for feeding ulcer patients as those who began feeding patients with typhoid. Sippy visited Berlin in 1904, and soon after his return published his modification of the Lenhartz diet. Other men visited Berlin about the same time, and at least ten different modifications of the Lenhartz treatment have been published. I was guilty of one of those myself. The original Lenhartz treatment provided for beginning the treatment with half-ounce hourly feedings. Sippy's modification makes it 3 ounces, an ounce and a half each of milk and cream. That is a dangerously high fat diet to begin with. That is one of the reasons why alkalis have to be given in the Sippy diet. The thing we should get is this, not to give our ulcer patients a routine diet but to make the diet fit the patient and not the patient fit the diet. Following hemorrhage from an ulcer, I think it would be well to use a modification of the Minot-Murphy diet for pernicious anemia.

DR. DOUGLAS VANDERHOOF, Richmond, Va.: I wish to emphasize one point. In the current literature one often sees the statement that the medical treatment of duodenal ulcer is fraught with much danger. In my whole experience, as I have outlined it here, I have never seen an instance of hemorrhage or perforation while the patient was under treatment, with the exception of one patient, treated more than ten years ago, who died from repeated hemorrhages. Of course, medical treatment will not cure 100 per cent of duodenal ulcers, but my experience certainly leads me to believe that an uncomplicated chronic duodenal ulcer is curable by medical treatment.

INFLUENZAL PERICARDITIS *

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Although a vast amount of work has been done to determine the etiology of influenza and a voluminous literature on the subject has accrued, it is not certain that the influenza bacillus causes the disease. Bronchopneumonia in which the influenza bacillus has been the only demonstrable organism present is not infrequent. Cases of purulent meningitis, nearly always fatal, have occurred in which the influenza bacillus alone was found. In 1897, Fraenkel [1] reported two such cases, in which at autopsy the meninges were covered with exudate and bathed in green yellow pus. The organisms which were found in direct smears of the exudate were both phagocytized and free. Pericarditis complicating pneumonia and empyema was frequently reported during the epidemic of 1918-1919 and 1920. In 300 necropsies of patients dying of influenzal pneumonia, reported by Stone,[2] pericarditis was found in 24 per cent and was usually secondary to empyema. The infecting organism was usually the pneumococcus or a streptococcus of the hemolytic variety.

In Levin's [3] review of 860 cases of influenza in children at the Cook County Hospital, pericarditis was said to have occurred not at all in 1918 and 1919, and only once in 1920. The bacteriologic observations were not reported in this case. A number of case reports of pericarditis following influenza have appeared in the literature, but only in a few of these has the influenza bacillus been the infecting organism. In 1918 Malloch and Rhea [4] described a case of purulent pericarditis due to the influenza bacillus. Because the condition is rarely seen, the case reported here is of some interest:

REPORT OF CASE

M. S., a boy, aged 6 years, was admitted to the Durand Hospital with the diagnosis of laryngeal diphtheria, having been ill for only a few hours, with symptoms of laryngeal obstruction. On admission the temperature was 103.4 F., pulse 140, and respiration 28. The white blood count was 35,000. There was evidence of right lower lobar consolidation at this time. Diphtheria antitoxin was given, and several hours later intubation was done to relieve increasing difficulty in breathing. As intubation apparently gave little relief tracheotomy was performed, but the respiration, pulse rate and temperature remained high. The child's condition remained little changed for three days, when evidence of pleurisy and extension of the pneumonia to the left lower lobe appeared. On the following day the child's condition seemed worse and a blood transfusion of 180 cc. of whole blood was given. During the transfusion the child became cyanotic and died before the operation was completed.

Postmortem examination by Dr. R. H. Jaffe, twelve hours after death, revealed extensive consolidation of the upper and lower lobes of the right lung and complete atelectasis of the

* From the John McCormick Institute for Infectious Diseases.

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2. Stone, W. J.: Pericarditis as a Complication of Pneumonia, Based on Three Hundred Necropsies, J. A. M. A. **73**: 254 (July 26) 1919.

3. Levin, I. M.: Influenza and Its Complication in Children: Review of Eight Hundred and Sixty Case Histories in Cook County Hospital, Inclusive of Epidemics of 1918, 1919 and 1920, Internat. Clinics **2**: 64, 1920.

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lower lobe of the left lung. There was a heavy deposit of fibrin over the left lower lobe. The pericardial cavity, which extended 3.5 cm. beyond the sternal margin in the fourth interspace on the right and to the anterior axillary line on the left, was distended with pus and fibrin, which covered the visceral surface of the pericardium with a shaggy green gray coating. The myocardium was soft and flabby. The mesenteric lymph nodes were all very large, the lipoid content of the suprarenals was diminished, and the liver and kidneys showed cloudy swelling. All the structures of the larynx were red and swollen.

Microscopic examination of the heart muscle showed a heavy deposit of leukocytes and fibrin adherent to the muscle wall and in many places invading it deeply. Bacilli resembling those in cultures from the pericardial fluid, both intracellularly and extracellularly located, were abundant in the exudate and scattered within the muscle fibers.

Cultures from the pericardial fluid contained a gram-negative bacillus corresponding culturally and morphologically to the influenza bacillus. No other bacteria were present. This organism was also found alone in direct smears from the pericardial fluid and in sections of consolidated lung.

SUMMARY

A case of pneumonia, pericarditis and laryngitis first received attention because of symptoms of laryngeal obstruction. The disease, which occurred when influenza was not epidemic, ran a rapid course. The influenza bacillus was isolated from the lungs and pericardial fluid in pure culture.

CARCINOMA OF THE ISLANDS OF THE PANCREAS *

HYPERINSULINISM AND HYPOGLYCEMIA

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We have recently studied, both clinically and at necropsy, a case of severe spontaneous hypoglycemia. This is attributed to a tumor of the islands of Langerhans with metastasis in the liver and lymph nodes. The condition has not been described heretofore and in this sense it represents a new disease.

It is well known that when the blood sugar is lowered sufficiently by the injection of insulin, a syndrome is provoked which is marked especially by tremor, tachycardia, convulsions and coma. This is ascribed to hypoglycemia, and the phenomenon has been variously designated as insulin reaction, insulin shock, hypoglycemic reaction and intoxicatio glycopriva.[1] Mansfeld[2] has produced hypoglycemia in dogs by mass ligation of the body of the pancreas which obstructs the ducts but preserves the blood supply of the distal part of the organ, and he attributes the hypoglycemia to the hypertrophy of the islands which follows the operation. Herxheimer[3] has ligated the pancreatic ducts in birds and found that the pancreas, after this operation, contained five times as much insulin as is usual. That massive regeneration of islets usually results from ligation of the pancreatic ducts is well known from the earlier studies of Herxheimer,[4] Bensley[5] and their pupils. Extreme hypoglycemia is also produced by extirpation of the liver, by Eck fistula, and by certain hepatic poisons such as hydrazine. Thus at least two types of hypoglycemia must be differentiated, the one pancreatogenic, due to insulin, the other hepatogenic, from failure of the liver to supply sugar to the blood.

In Addison's disease,[6] in hypothyroidism,[7] in certain forms of hypopituitarism, in progressive muscular atrophy[8] and in status thymolymphaticus[9] the blood sugar has been found low, although seldom if ever low enough to provoke symptoms.

That prolonged starvation may lead to fatal hypoglycemia was first observed by Joslin[10] in patients with diabetes. In adults with no diabetes, undernutrition may or may not cause low blood sugar.[11] In five children subjected to experimental fasts, Talbot and his associates[12] observed hypoglycemia; in one case this reached 0.038. No symptoms were noted except in one case, and they were indefinite. Mild cases of hypoglycemia have been reported by Cammidge[13] in cases of hepatic disease, and a severe case, thought to be of hepatic origin, has been described in interesting detail by Wagner and his associates.[14] Hypoglycemia thought to be of pancreatic origin (hyperinsulinism) has been reported (Harris,[15] Jonas,[16] John[17] and others), but thus far conclusive evidence has not been advanced to support a diagnosis of spontaneous clinical hyperinsulinism.

Carcinoma of the pancreas commonly arises from the ducts or acini, and heretofore its origin in the islands has not been conclusively demonstrated. The statement of Fabozzi[18] that a large proportion of pancreatic cancers originate from islands was never credited; and while Horgan,[19] in a study of pancreatitis, observed cellular evidence of malignancy in islets that had undergone hypertrophy, the tumors in his cases were microscopic, and metastasis to other structures was not found. Hypertrophy of the islands is common, but adenoma is

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* Read before the Society of Clinical Investigation, Atlantic City, N. J., May 2, 1927.

* From the Section on Diabetes and General Nutrition of the Division of Medicine and the Division of Pathologic Anatomy, Mayo Clinic.

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comparatively rare. The literature contains not more than twenty reports of adenoma, the most recent being that of Warren.[20] In none of them is there any question of malignancy. These pathologic studies do not contain clinical information or suggestion of symptoms of hypoglycemia, and only one of their authors (Rollett[21]) goes so far as to speculate on the possibility of such tumors having physiologic significance.

REPORT OF CASE

History.—A physician, aged 40, had had an exploratory operation performed elsewhere in 1919 because of epigastric pain simulating peptic ulcer and, although nothing definitely abnormal was discovered, gastro-enterostomy was performed and the appendix was removed. After this the pain was somewhat relieved, so that the patient was able to resume an active surgical practice. He had been examined at the Mayo Clinic in February, 1922, and in January, 1925, on both occasions because of vague periodic pains in the upper abdomen. The results of these examinations were essentially negative. In the first of them repeated Wassermann tests were made before and after a provocative injection of arsphenamine; all were negative. The cerebrospinal fluid contained a normal number of cells and was negative to the Wassermann, Nonne and colloidal gold tests.

An attack of renal colic, in which two calculi were excreted, occurred in 1924. The urine at that time was found to contain sugar and, while none of the cardinal symptoms of diabetes existed, a qualitative dietary restriction was instituted. The diet was soon discontinued, and when we made our examination in January, 1925, the fasting blood sugar was normal; one specimen of the urine was sugar-free, while others showed traces of sugar.

TABLE 1.—*Glucose Tolerance Test**

Time, Hours	Blood Sugar, Milligrams for Each 100 Cc.	Urine Sugar	Comment
0	68	0	Dextrose fed, 120 Gm.
½	242	+	
1	283	+	
2	223	+	
3	70	—	Total sugar excreted, 5 Gm.

Basal metabolic rate, +8.
Basal respiratory quotient, 0.70.

* Metabolism data obtained by Dr. Henry Ulrich in April, 1926.

The symptoms that prompted the third and last visit to the Mayo Clinic (Oct. 29, 1926) had been present for eighteen months, beginning as sudden attacks of faintness and weakness, with paresthetic numbness of the tongue and lips. As time passed these attacks occurred more frequently and were more severe, producing greater weakness, profuse perspiration and trembling. They came when meals were delayed or if unusual exertion was undertaken, and the patient himself discovered that he could prevent them by eating between meals and by taking sweet drinks.

The first attack resulting in collapse came in November, 1925. The patient had been operating later than usual and, being overtaken by weariness, was soon mentally confused and collapsed in a stupor. Attendants thought he had lost consciousness, but he was able to swallow an egg-nog, which an assistant gave him, and in a few minutes had completely revived. The similarity of this phenomenon to an insulin reaction led the patient and his associates to the belief that he was affected with spontaneous hyperinsulinism, and from this time on he consistently took food at frequent regular intervals.

In March, 1926, in the course of an examination by Dr. H. L. Ulrich of Minneapolis, a brief fast preliminary to a clinical test resulted in coma, which lasted two hours. Resuscitation was effected only by an intravenous injection of dextrose. Blood sugar was not determined during the coma, but a test meal of dextrose was given later and the results of this on the blood sugar as well as other data were presented by Dr. Ulrich at the meeting of the Minnesota Society of Internal Medicine, held in Rochester in November, 1926 (table 1).

As time passed, the tendency to hypoglycemia increased so that the interval between the patient's taking food had to be decreased and it became necessary for his wife to watch when the patient slept and put candy into his mouth at the first sign of unusual behavior. The body weight fell from 170 to 117 pounds (from 77 to 53 Kg.) during the first year (1918); it rose somewhat after the operation in 1919, but continued below normal until the spring of 1926. Then a gradual gain began and 25 pounds (11 Kg.) was added in the next six months.

The epigastric distress, less severe than formerly, persisted as heartburn and flatulence after eating. During the past year the patient had had four attacks of pain, each lasting several days and similar to the former trouble. The pulse rate, which for years had been slow, about 60 a minute, had been accelerated to 90 or more for the past year. Numerous furuncles had appeared during the year. Other details of the history are of little significance. The family history, however, contains the interesting information that a paternal cousin had died with symptoms which resembled those experienced by the patient. This cousin had been attended by Dr. W. J. Mayo and Dr. J. B. Herrick, whose clinical diagnosis was myasthenia gravis. In this case necropsy was not held.

Examination.—The patient was well developed and somewhat obese; height, 5 feet 9 inches (175 cm.); weight unclothed, 161½ pounds (73 Kg.). The general appearance was healthy, except for a slightly grayish pallor. A small furuncle was situated behind the left ear, and an eczematous skin lesion affected the groins and genitalia. The thyroid seemed normal, as did also the heart and lungs. The pulse rate was 90. The systolic blood pressure was 110 and the diastolic 60. The abdomen was soft and nowhere tender. The liver edge, which was firm and rounded, could be easily palpated just below the costal margin. It was not tender. No sensory, motor or reflex disturbances could be determined. A roentgenogram of the skull showed nothing unusual; the sella turcica cast a normal shadow. The blood Wassermann test was negative; the urinalysis was negative; hemoglobin (Dare) was 70 per cent; erythrocytes numbered 3,860,000; leukocytes, 15,600 (lymphocytes 17 per cent, large mononuclears 1.0 per cent, transitionals 3.0 per cent, neutrophils 77.0 per cent, eosinophils 1.5 per cent, basophils 0.5 per cent).

CLINICAL STUDIES

The Hypoglycemic Reaction.—After the mixed noon meal of October 31, sugar was withheld. The patient remained in bed under constant observation. The systolic blood pressure was 110 and the diastolic 60. The first symptoms appeared three hours and twenty minutes after the meal, when the blood sugar[22] had fallen to 0.055 Gm. per hundred cubic centimeters. There was a sense of apprehension and depression, with vague paresthesia. Fifteen minutes later, perspiration and tremor were noted. At four hours the blood sugar had fallen to 0.036 Gm. per hundred cubic centimeters, the face twitched, speech was incoherent, and the systolic blood pressure was elevated to 134 while the diastolic remained at 60. At four hours and fifteen minutes the blood sugar reached 0.027 Gm. per hundred cubic centimeters; the patient was stuporous and no longer able to speak, tossing about with irregular, convulsive jerkings that affected the entire body. Fifteen grams of dextrose was fed by mouth, and in ten minutes rational conversation was resumed. The blood sugar was 0.065; the systolic blood pressure was 122 and the diastolic 48.

Metabolic Data After Test-Meals of Dextrose and Fructose.—The usual routine for postprandial observations of metabolic rate, respiratory quotient and blood sugar could not be followed because of the necessity for feeding at frequent intervals. Consequently the first observations in the experiments recorded in tables 2 and 3 are the conditions existing at stated intervals after a given feeding and are not "basal." The patient remained at rest in bed during these experiments.

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22. Venous blood was used for all blood sugar determinations; the Folin-Wu technic was followed.

The administration of 100 Gm. of dextrose one hour after a feeding of 15 Gm. of carbohydrate (November 3, table 2) caused the blood sugar to rise in one-half hour from 0.085 to 0.218 Gm., and traces of sugar to be excreted in the urine. By three hours the blood sugar had fallen again to 0.031 Gm. The metabolic rate, + 27 at the start, mounted to + 43 in one hour; the respiratory quotient rose from 0.90 to 1.06 in two

TABLE 2.—*Glucose Test, Nov. 3, 1926*

Time, Hours	Blood Sugar, Milligrams for Each 100 Cc.	Blood, Inorganic Phosphates, Milligrams for Each 100 Cc.	Urine, Sugar	Total Calories Each Hour	Metabolic Rate, Du Bois Standard	Respiratory Quotient	Comment
0.0	85	2.65	0	91.8	+27	0.90	15 Gm. carbohydrate one hour before, 100 Gm. dextrose at zero hour
0.5	218	2.55	Trace	95.9	+32	0.97	
1.0	...	....	..	103.0	+43	1.03	
2.0	214	2.11	+*	99.1	+38	1.06	
2.5	...	....	..	93.5	+30	1.04	
3.0	81	2.17	0	....	....	....	Reaction †

* 0.8 Gm.

† Weakness, tremor, blurred vision. Given 1 mg. epinephrine without benefit; complete relief after taking sugar.

TABLE 3.—*Fructose Test, Nov. 23, 1926*

Time, Hours	Blood Sugar, Milligrams for Each 100 Cc.	Urine, Sugar	Total Calories Each Hour	Metabolic Rate, Du Bois Standard	Respiratory Quotient	Comment
0.0	..	0	96.4	+30	0.89	15 Gm. carbohydrate one hour before, 100 Gm. fructose at zero hour
0.5	..	0	96.7	+30	1.08	
1.0	53	0	111.2	+52	1.05	
1.5	37	0	111.5	+52	1.08	
2.0	..	0	106.9	+45	1.01	
2.5	27	0	....	....	....	Reaction*

* Weakness, tremor, blurred vision at two hours and thirty-three minutes, counteracted by the administration of sugar.

hours. The blood phosphates declined from the preliminary concentration of 2.65 mg. per hundred cubic centimeters to 2.11 mg.

In the fructose experiment, 100 Gm. of fructose was given by mouth one hour after a feeding of 15 Gm. of carbohydrate (November 23, table 3). The preliminary determination and a half-hour determination of blood sugar were unfortunately lost; at one hour the blood sugar was 0.053 Gm., and at two hours 0.027. Symptoms of hypoglycemia did not appear for two hours and thirty-three minutes. At this date, had the fructose been without effect, symptoms would certainly have occurred within one hour after its administration. The metabolic rate rose from + 30 to + 52, the respiratory quotient from 0.89 to 1.08.

Effect of a Fat Meal.—A fat meal consisting of 250 cc. of 40 per cent cream was fed two hours after the patient had ingested 30 Gm. of carbohydrate (November 6). The patient was not exhibiting symptoms of hypoglycemia, but the blood sugar was very low. Within thirty minutes extremely severe symptoms occurred, soon followed by complete loss of consciousness, so that an intravenous injection of dextrose was required for resuscitation.

Studies of Hepatic Function.—Bile formation was apparently normal. The stool was normally colored and did not contain an unusual amount of fat or other evidence of digestive disturbances.

The serum bilirubin was less than 0.3 mg. per hundred cubic centimeters by the indirect van den Bergh reaction.

Function tested by phenoltetrachlorphthalein (Rowntree, Rosenthal) was normal.

Fractionation of the nitrogen of the urine showed normal partition between urea and the other nitrogenous constituents (table 4). A similar fractionation of the nitrogen of the blood gave normal relationships (table 5). There was therefore no gross disturbance in the deaminizing function of the liver. In order to test this further the amino-acid alanine was fed in two experiments. The results of these appear to be within the normal range (table 6).

Effect of Epinephrine.—The thought that we might have to deal with a dissociated derangement of the liver whereby the glycogen function was alone disturbed prompted us to investigate the effect of injecting epinephrine. Normally, epinephrine mobilizes glycogen and, if glycogen stores are present, produces hyperglycemia. In one experiment (November 3) 1 mg. of epinephrine was administered at a time when the patient was beginning to manifest symptoms of hypoglycemia and the blood sugar was 0.031 Gm. The symptoms were not affected and sugar had to be given four minutes later to prevent collapse. In a second experiment (November 9) 1 mg. of epinephrine was injected at a time when the patient felt normal and the blood sugar was 0.056. This produced an unusually intense circulatory response but did not interrupt or delay the fall of the blood sugar. In twenty-four minutes the latter had reached 0.025, and sugar had to be given for resuscitation.

Effect of Solution of Pituitary.—Double strength solution of pituitary was injected subcutaneously in dosages of 1 cc. In one experiment (October 30) the first injection was made at a time when the blood sugar was low (0.031 Gm.). Symptoms appeared, and forty minutes later a second injection was made. Sugar was required within five minutes after the second injection. In a second experiment (November 2) a series of three injections was carried out, when the blood sugar was high

TABLE 4.—*Partition of the Nitrogen of the Urine* *

1926	Total Nitrogen, Gm.	Urea Nitrogen, Gm.	Ammonia Nitrogen, Gm.	Uric Acid Nitrogen, Gm.	Creatinine Nitrogen, Gm.	Creatine Nitrogen, Gm.
11/ 4	5.90	4.88	0.31	....	....	....
11/ 5	3.92	3.44	0.24	0.34	....	....
11/ 6	4.80	3.69	0.11	0.43	....	....
11/ 7	9.50	7.30	0.51	0.53	....	....
12/31	3.40	....	....	....	0.25	0.03

* No attempt was made to maintain a constant nitrogen intake.

TABLE 5.—*Partition of Nonprotein Nitrogen of the Blood*

	Milligrams for Each 100 Cc., Average	Number of Determinations
Urea nitrogen	10.3	9
Creatinine nitrogen	0.4	1
Uric-acid nitrogen	0.9	2
Amino-acid nitrogen	6.0	5
Total nonprotein nitrogen	26.6	8

TABLE 6.—*Disposal of Ingested Alanine* *

Date, 1926	Experiment	Time, Hours	Alanine Fed, Gm.	Total Nitrogen, Gm.	Combined Urea and Ammonia Nitrogen, Gm.	Amino-Acid Nitrogen, Gm.	Blood, Amino-Acid Nitrogen, Milligrams for Each 100 Cc.
11/11	1	3	..	0.66	....	0.009	5.7
		3	25	3.14	....	0.334	7.9
		18	..	8.00	....	0.233	5.3
11/28	2	8	..	3.59	2.39	0.050	4.4
		8	40	4.59	3.33	0.307	...
		8	..	3.36	2.81	0.164	6.5

* d-l alanine, commercial.

(0.131 Gm.) at the outset. This did not prevent the usual rate of fall of the blood sugar or delay the development of symptoms of hypoglycemia.

Sugar Requirement.—When the patient was admitted to the hospital he was eating three ordinary meals and taking from 10 to 20 Gm. of candy at intervals of from two to three hours. As time passed it became necessary to increase the sugar feedings and to shorten the intervals between them. November 10, the requirement for twenty-four hours was determined by

means of a Woodyatt[23] pump and a duodenal tube. No other food was given during the course of the experiment. When the pump delivered 20 Gm. an hour the patient remained normal, but with an injection rate any lower than this symptoms promptly appeared. The same procedure repeated November 26 revealed that no less than 25 Gm. of dextrose was required hourly.

EXPLORATORY OPERATION

As medical treatment did not offer any hope of controlling the disease and the patient desired a surgical exploration, an operation was performed, December 4, by Dr. W. J. Mayo. The pancreas was large, hard and nodular, with the exception

Fig. 1.—Pancreas with distal half split lengthwise: The tumor is in the last quarter and the cyst is surrounded by tumor substance.

of the head, which seemed fairly normal. A tumor could be felt in the right lobe of the liver and a small hard nodule near it close to the surface. The gallbladder was buried in adhesions. The old gastro-enteric anastomosis appeared satisfactory. The gallbladder was removed, showing on pathologic examination chronic catarrhal inflammation and papillomatosis.

A small bit of liver was removed for analysis for glycogen. This was immediately frozen in a mixture of ether and carbon dioxide snow, weighed in a frozen condition in a stoppered vacuum weighing bottle, and its glycogen was determined by Pflüger's method. The result, as glycogen, was 3.49 per cent.

The anesthetic (ether) was started at 8 a. m. The patient had been given 30 Gm. of dextrose at 7:30 a. m., and nothing more until the completion of the operation at 9:15 a. m. The blood at 7:30 a. m. contained 0.101 Gm. of sugar for each 100 cc., and at 9:15 a. m., 0.138 Gm. At this date (December 4) marked hypoglycemia was ordinarily manifested within an hour and a half after the ingestion of 30 Gm. of sugar.

SUBSEQUENT COURSE

It was expected that the postoperative management would offer a serious problem. Nausea would prevent the giving of sugar by mouth; enemas might not be retained and in any case would not provide the means of absorbing enough sugar to meet the enormous requirement. The conspicuous superficial veins were few, and frequent puncturing of these would soon result in their obliteration. The problem was solved by maintaining a continuous intravenous injection of 20 per cent dextrose solution with a Woodyatt pump. A cannula was tied in a vein of the forearm and the pump was in operation within a few minutes after the patient's return from the surgical pavilion. It was necessary to continue this injection for sixty-three hours. Attempts to give sugar or other food by mouth earlier than this always provoked vomiting. Only one vein was used, and the patient did not suffer discomfort until near the end of the period, when the arm became somewhat swollen and painful.

The rate of injection required to maintain the blood sugar was at first astonishingly low; 7 Gm. of sugar an hour sufficed for sixteen hours, whereas before the operation the requirement had been 25 Gm. an hour as determined by continuous administration by duodenal tube, and the patient was eating food with a total sugar value of 750 Gm. a day (31 Gm. an hour). The requirement gradually rose, until toward the close of the period of injection it approached these high figures. After the resumption of oral feeding more sugar was needed than ever before, the requirement finally reaching 1,000 Gm. a day.

With the information obtained at the operation in mind, we made the tentative diagnosis of carcinoma of the islands of Langerhans, with metastasis to the liver and overproduction of insulin by the cancer tissue. Accordingly we advised the use of radium over the liver in an attempt to inhibit the functioning of the cancer. This, however, was without appreciable influence on the sugar requirement.

The patient's weight, October 29, was 161½ pounds (73.2 Kg.); November 22, 171 pounds (77.6 Kg.), and December 29, 168 pounds (76.2 Kg.). He died, Jan. 3, 1927, for no apparent reason other than exhaustion. He was not in a state of hypoglycemia at the time; at least, he was conscious and entirely rational to within a few minutes of death.

POSTMORTEM EXAMINATION

The examination was begun two hours and twenty-five minutes after death. The important features in this examination may be thus summarized: The liver was definitely enlarged, weighing 3,392 Gm. Its surface was smooth and shining except in the upper portion of the right lobe. The normal reddish color was partially replaced by an unusual pearly grayness, and the capsule was shiny and glistening. The consistency was distinctly increased, doughy, but not soft. The lower anterior margin was rounded. There were a few foci with a faint yellowish tinge. On the upper surface of the right lobe were found two tumors (fig. 1), one slightly roughened on its surface, yellowish brown and raised approximately 3 mm. above the surrounding capsule. One of these measured 5 cm. in diameter and the other, a short distance from it, 3 cm. in diameter. On section, the surface of these tumors was yellowish gray with a definite reddish tinge in portions. The glistening appearance seen on the surface of the liver was present on section. On the inferior surface of the right lobe was a similar nodule 6 cm. in diameter; in the inferior margin of the left lobe was a smaller tumor a few millimeters in diameter, and at the upper portion of the right lobe mesial to the two larger ones first mentioned, another, 1.5 cm. in diameter. In

Fig. 2.—Liver with tumor nodules in superior portion of right lobe.

the region of the latter there was a definite nutmeg zone of congested liver extending to the capsule. All these tumors were similar in markings and all were rounded, and could be easily enucleated. Lymph nodes in the region of the stomach and pancreas were irregularly enlarged, firm, and on section grayish white.

The pancreas weighed 120 Gm. The head and greater portion of the body appeared normal both on the surface and on section. The tail of the pancreas was definitely increased in consistency and curved downward against the left side of the spinal column. There was distinct thickening of this portion for fully 5 cm., and the surrounding peripancreatic fat was adherent in an irregular manner to the pancreatic pulp. On section this portion was found to contain yellowish and gray-

23. Woodyatt, R. T.: The Method of Timed Intravenous Injections, J. Biol. Chem. **29**: 355-366 (March) 1917.

ish yellow rounded nodules varying from a few millimeters to 1.3 cm. in diameter, surrounded by varying amounts of dense grayish connective tissue. At the extreme tip was a round cyst 1.5 cm. in diameter (fig. 2), having a moderately thick wall and containing clear fluid. Small yellowish nodules projected into the lumen of this cyst. The pancreatic duct was not dilated and contained a thick mucoid substance.

The kidneys were slightly increased in size (left, 186 Gm.; right, 160 Gm.). There was a slight grayish tinge to the outer surface and, on section, to the cortices, suggesting the appearance of the liver but with a more distinctly reddish brown.

Microscopic study of the pancreatic tumor by paraffin sections stained with hematoxylin and eosin showed the following:

In the tail of the pancreas, pancreatic tissue was replaced extensively by focal masses of tumor cells which were embedded in a dense connective tissue stroma and arranged in irregular strands and islands (fig. 3). These cells were somewhat irregular in size and shape, and staining reaction, as well as arrangement, but their resemblance to the cells of the islands of Langerhans was striking. The cytoplasm was well stained, having a slightly basophilic reaction. Nuclei were enlarged and as a rule showed distinct nucleoli, with the nuclear chromatin irregularly distributed in the form of basophilic granules. The cell masses were arranged about capillaries, usually in two rows. Occasionally an alveolar arrangement was suggested, but more often there was no evidence of glandular structure. In the midst of the tumor and its connective tissue, no islands could be demonstrated. In the adjacent pancreatic tissue, occasional degenerating islands were found. The general resemblance of the tumor cells to island tissue in arrangement, staining reaction and size was noteworthy. In certain portions of the tail of the pancreas the tumor cells were degenerating, this degeneration varying from actual necrosis with polymorphonuclear infiltration to hydropic change in the cells and evidences of slow lysis. There was conspicuous absence of adipose tissue.

The adjacent lymph node showed similar but denser masses of tumor cells, arranged in irregular strands and islands and bearing a striking resemblance morphologically to normal islands of Langerhans. Necrosis was not so apparent; but neither were capillary branches, and blood sinuses were conspicuously absent.

The nodules in the liver were composed of similar cells, similarly arranged, but in several areas in the smaller nodules

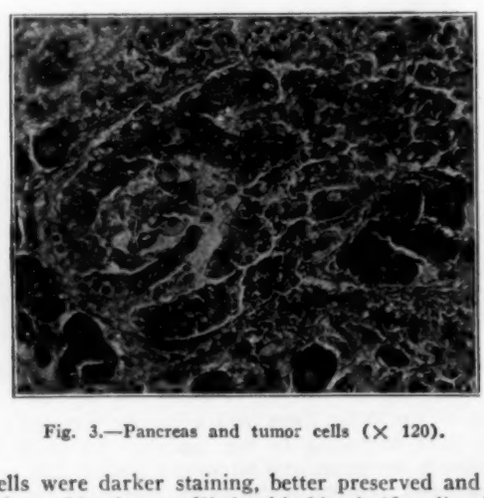

Fig. 3.—Pancreas and tumor cells (× 120).

these cells were darker staining, better preserved and in close association with sinuses filled with blood (fig. 4). In these smaller nodules, numerous mitotic figures were present, although they were not found in the primary tumor or in the other metastatic growths. The tumor cords and islands bore the same relation to these sinuses as the liver cells, except that the sinuses were widely dilated and deeply congested. There was no necrosis in these areas. The larger nodules in the liver showed areas of necrosis and portions in various stages of degeneration. There was no evidence of dense connective tissue.

The small nodule in the mesentery showed a few collections of tumor cells similar to those described, and a large encapsulated mass of partially calcified necrotic débris containing numerous cholesterin crystals.

The cells of the convoluted tubules of the kidney were distended with some clear substance which did not stain with sudan III. The hepatic cells were similarly distended and, by Best's carmine stain for glycogen, large amounts of this substance were shown to be present in these clear cells.

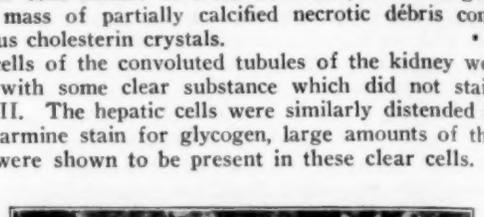

Fig. 4.—Nodule in liver; carcinomatous masses closely associated with blood sinuses (× 250).

From the anatomic examination alone it seems fairly clear that a neoplasm had been present for a long time in the tail of the pancreas and that it had grown so slowly that degeneration had almost kept pace with growth. The large amount of connective tissue, the lack of blood sinuses, the presence of an area of old fat necrosis in the adjacent omentum, and the degeneration and necrosis of the tumor itself, with cyst formation, are evidences of this fact. In the lymph nodes there was a fresher growth of cells but insufficient vascularity for rapid absorption. In the liver nodules, however, the cells were the freshest in type, most rapidly growing and closely associated with large blood sinuses. If absorption of any specific product had taken place from tumor cells it would be presumably from these freshly growing liver nodules. Huge deposits of glycogen evidently account for the increased weight and peculiar consistency and color changes in the liver and kidneys.

The structural resemblance of the cells of this neoplasm to those of the islands of Langerhans in the pancreas, as well as the absence of any similarity of this tumor to the usual types of pancreatic and hepatic growths, gives force to the conclusion that this is a carcinoma arising primarily in the island cells.

ANALYSIS OF LIVER FOR SUGAR AND GLYCOGEN

A sample of the noncancerous portion of the liver obtained at necropsy was preserved in a freezing mixture of ether and carbon dioxide snow. In a frozen condition in a stoppered vacuum weighing bottle it weighed 17.33 Gm. This was analyzed for free sugar and for glycogen. The residue of the extract with 95 per cent alcohol dissolved in water (free sugar) had practically no reducing power. The glycogen content of the sample, determined by Pflüger's method, was 8.25 per cent.

EXTRACTION OF TISSUES FOR INSULIN

Parallel extractions were made of 43.8 Gm. of noncarcinomatous hepatic tissue and 44 Gm. of a carcinomatous nodule taken from the liver. These tissues were also preserved in the ether-carbon dioxide freezing mixture. A method described by Best and Scott[24] was followed. The final precipitate from the liver extract, after drying, weighed 33 mg., that from the cancer 57 mg. These precipitates were dissolved in very dilute sodium hydroxide, p_H 8.0, and then brought to p_H 3.5 by the addition of hydrochloric acid. The resulting solutions were clear and colorless. The material from the

24. Best, C. H., and Scott, D. A.: The Preparation of Insulin, J. Biol. Chem. **57**: 709-723 (Oct.) 1923.

noncarcinomatous tissue was made up to a total volume of 6 cc., that from the tumor to 12 cc.

The insulin activity of these extracts was tested on the previously standardized rabbits B and G (table 7). The animals were on a ration of oats and cabbage. Food was withheld for twenty-four hours before each test and the tests were made not oftener than once every four days. Blood was taken by slitting the marginal vein of the ear for analysis for sugar by Somogyi's[25] modification of the Schaffer Hartman method; 0.2 cc. of blood was used for each analysis. The rabbits were first injected with insulin-Lilly and subsequently with the extracts. In all experiments they were handled very carefully in order to avoid fluctuation in blood sugar due to excitement.

TABLE 7.—*Effect of Tissue Extracts on the Blood Sugar of Rabbits*

Experiment	Material Injected	Blood Sugar, Milligrams for Each 100 Cc. 0 Hour	1.5 Hours	3 Hours	5 Hours
	Experiments on Rabbit B; Weight, 2,600 Gm.				
1	3 units insulin-Lilly*	134	...	30	...
2	2 units insulin	117	72	76	81
3	½ total extract liver	127	125	124	129
4	¼ total extract liver tumor	121	47	79	77
5	⅛ total extract liver tumor	118	60	74	107
	Experiments on Rabbit G; Weight, 2,200 Gm.				
1	2 units insulin	109	72	81	100
2	½ total extract liver	135	124	117	117
3	⅛ total extract liver tumor	127	63	61	89

* Clinical units.

The extract made from the noncarcinomatous portion of the liver was without appreciable effect on rabbit B and of doubtful effect on rabbit G. The extract made from the tumor in the liver produced unequivocal lowering of the blood sugar in both rabbits. The effects with an injection of one eighth of the total extract from the hepatic tumor resembled that produced by the injection of 2 clinical units of the insulin preparation, from which it is estimated that the carcinomatous tissue yielded at least 40 units of insulin for each hundred grams.

COMMENT

The evidence here of hyperinsulinism from carcinoma of the islands appears to be completed by the observations at necropsy and the demonstration of the insulin action of the extracts of the cancer. Nevertheless, a few questions arise for consideration.

There are very few instances on record in which cancer of any origin has retained the function of the parent cell. Tumors of the liver may produce bile; in a famous case of von Eiselsberg[26] the development of metastatic cancer from the thyroid corrected myxdema; carcinomas of the suprarenal cortex have been associated with hirsutism and other evidences of hormonal disturbance. In some of these cases there may be legitimate doubt whether the tumor was a metastatic neoplasm or merely an embryonic rest, undergoing hypertrophy and hyperplasia. In our case there is no such doubt. Carcinoma was present in the pancreas, and this bears every morphologic evidence of being of greater age than the growths in the liver and lymph nodes.

The extracts of the carcinoma in the liver contained from one fourth to one half as much insulin as is ordinarily obtained on extracting pancreas. In order to avoid being led into error by insulin activity such as may be obtained from normal tissues other than pancreas, we extracted a noncancerous portion of the liver by the identical procedure applied to the tumor tissue. The extract of the liver was inert; that of the tumor, very active. A more refined technic should have demonstrated some insulin in the liver, but with it the yield from the tumor would have been proportionately greater. The possibility that malignant growths generally yield insulin has been investigated by Roffo and Correa,[27] by Cori[28] and by Cramer, Dickens and Dodds.[29] Roffo and Correa reported obtaining very small amounts of insulin (from 8 to 12 units) from large amounts of spindle-cell sarcoma of white rats, but Cori and Cramer, Dickens and Dodds could not extract insulin from a variety of malignant tumors.

The term "hyperinsulinism," so far as it implies an abnormally large total production or liberation of insulin, is not entirely satisfactory, because the symptoms of hypoglycemia might be accounted for without assuming a massive supply of insulin. If the product of the carcinoma cells were toxic, its activity could be disproportional to its amount, a supposition somewhat similar to the hypothesis of Plummer[30] in the case of the product of the thyroid in exophthalmic goiter. Against such a view should be set both the observation that the symptoms exhibited by the patient were indistinguishable from those commonly produced by the injection of an insulin preparation, and the fact that the extract made from the tumor behaved exactly like an insulin preparation on injection into rabbits. A more plausible possibility is that small amounts of insulin were being liberated continuously whether the blood sugar was high or low, that is, irrespective of the need for insulin. Jordan's[31] work furnishes indirect proof that the secretion of the normal pancreas is regulated by the need for it, and a considerable amount of evidence suggests that such regulation is at least in part neurogenic.[32] The metastatic tumors in our case were released from nerve control by virtue of their situation, and the influences which ordinarily govern insulin liberation may have had no effect on them. They would therefore function unrestrainedly and continue to liberate insulin whether the blood sugar was rising or falling. The cancer in the pancreas showed every sign of slow growth and age. It must have been present for years without producing symptoms of hyperinsulinism. The latter developed only during the last eighteen months; that is, at the time when metastasis may be expected to have occurred. This time relationship suggests that the abnormal insulin production was due less to the primary tumor than to the metastatic, and the examination of the tumor leads to the same

25. Somogyi, Michael: Notes on Sugar Determination, J. Biol. Chem. **70:** 599-612 (Nov.) 1926.

26. Von Eiselsberg, A. F.: Die Krankheiten der Schildrüse, Deutsche Chirurgie, Stuttgart, Enke, 1901, p. 191.

27. Roffo, A. H.; and Correa, L. M.: Presence in Malignant Growths of a Substance Resembling Insulin, Prensa méd. argent. **13:** 668 (Dec. 20) 1926; abstr. J. A. M. A. **88:** 767 (March 5) 1927.

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29. Cramer, W.; Dickens, F., and Dodds, E. C.: Insulin in Normal and Cancerous Tissues, Brit. J. Exper. Path. **7:** 299-301 (Oct.) 1926.

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conclusion. The cancer cells in the pancreas were degenerating, buried in dense connective tissue and poorly supplied with blood vessels, while much of the cancer in the liver was richly vascular and consisted of young and virile cells.

However, even though the symptoms of hypoglycemia may be accounted for without the assumption that abnormally large amounts of insulin are liberated, other facts show that such liberation was actually in excess of the normal in this case. The tremendous amount of sugar required to prevent hypoglycemia is proof of this, and confirmatory evidence is furnished by the experiments with solution of pituitary and with epinephrine. Burn [33] maintains that solution of pituitary neutralizes insulin directly, and if this is true the absence of effect by the injections of solution of pituitary in our patient would indicate such excesses of insulin that the amount of solution of pituitary given could not neutralize enough of it to prevent hypoglycemia. This would be a question of quantitative relationships. The elevation of the blood sugar that is normally produced by epinephrine is supposed to result from the action of this hormone on glycogen stores. In our case the administration of a dose of epinephrine that was sufficient to provoke neurocirculatory distress would not prevent the blood sugar from falling.

In the unusual case of spontaneous hypoglycemia studied by Wagner and Parnas,[14] similar negative results with epinephrine led to the conclusion that the liver was void of mobilizable glycogen. The glycogen content of the liver in their case is not known; and while it was presumed to be small it may be that when direct determination is possible as much glycogen will be found as we demonstrated in the liver in our case. The hyperglycemia from injections of epinephrine in normal animals can be prevented by the simultaneous injection of insulin; in view of this the stability of the liver glycogen in our case must mean an excess of insulin. It is hardly conceivable that a dissociated disorder of glycogen function should have existed independently in the same patient with this other rare condition; as a matter of fact, there is evidence that glycogen was mobilized when ether was administered.

The action of ether in causing hyperglycemia in normal animals may be attributable to a direct effect on the hepatic glycogen or to inhibition of the production and liberation of insulin. Best and his associates obtained unusually low yields of insulin on extracting the tissues of etherized animals, and it is well known by clinicians that the insulin requirement of diabetic patients is increased after ether anesthesia. In the condition of hyperinsulinism under discussion we not only had evidence of glycogenolysis during the period of ether anesthesia but found that the sugar requirement remained for forty-eight hours very much lower than it had been before the operation. This suggests that the formation or liberation of insulin was inhibited by the operation or the anesthetic, and the presumption is that the latter was responsible.

Another interesting phenomenon was the response to test meals of dextrose. When dextrose was fed the blood sugar rose to abnormally high levels and sugar was excreted in the urine, as in diabetes. This occurring in a patient with a disease the opposite of diabetes was puzzling and led us for a time to regard the patient's condition as one of hepatic disorder, loss of glycogen function (hepatogenic hypoglycemia). A similar instability of blood sugar was observed in Wagner and Parnas' case and was another reason for their conclusion that the abnormality in their case was inability of the liver to store sugar. The Lepine-Naunyn [34] designation azoamylia was resurrected as a term descriptive of the condition presumed to exist; namely, loss of the power to store sugar in the form of glycogen (zoamylon). In our case, however, the liver was gorged with glycogen so that it weighed 3,300 Gm. and contained 8.25 per cent of glycogen two and a half hours after death. Therefore, azoamylia cannot describe the condition with which we were dealing and another explanation must be sought for the paradoxical association of a symptom of diabetes in a case of hyperinsulinism. The only way that we can account for it is by the assumption that the glycogen capacity of the liver is limited and that the liver in this case was so full of glycogen as to be unable to function efficiently in removing sugar from the blood. We are aware of the experiments of Traugott,[35] Eisner and Forster,[36] and Hetenyi and Pozamy,[37] and that these authors are vigorously combating the idea that the liver ever removes sugar from the portal blood; but we do not believe they have presented sufficient evidence to upset the older theory which regards the glycogen depots of the liver as reservoirs which normally prevent excessive fluctuations of the blood sugar.

In our case there was a disturbance of the glycogen mechanism much like that which Wagner and Parnas pictured, but differing from their conception in that the liver was shown to be filled with glycogen instead of being depleted of glycogen as they assumed. This glycogen was held in the liver unusually firmly because of the constantly maintained insulin action and was therefore more or less insensitive to epinephrine. At the same time, since the liver was filled to capacity by the large amount of sugar ingested, its glycogen function in the sense that this implies the ability of the liver to function as a reservoir was, in fact, seriously depressed.

Fructose postponed the development of hypoglycemia in this case; this may be further evidence of the pancreatic (hyperinsulin) nature of the tendency to hypoglycemia in this case. Fructose has very slight influence on the hypoglycemia which follows hepatectomy.[38] The elevation of the blood pressure which accompanied the hypoglycemic reactions is a phenomenon which we have repeatedly observed in cases in which serious reactions follow injections of an insulin preparation.[39]

The very high respiratory quotients, especially the quotients over unity noted after the dextrose and fructose meals, observed both in this case and in Helmreich and Wagner's,[14] probably denote the conversion of sugar to fat. This may account for the fact that our patient gained steadily in weight, despite the carcinoma, and was moderately obese at his death.

33. Burn, J. H.: The Modification of the Action of Insulin by Pituitary Extract and Other Substances, J. Physiol **57**: 318-329 (June) 1923.

34. Naunyn, Bernard: Der diabetes mellitus, ed. 2, Vienna, A. Hölder, 1906, p. 464.

35. Traugott, Carl: Ueber alimentäre hyperglykämie und Glykosurie mit besonderer Berücksichtigung der innocenten Glykosurie, Klin. Wchnschr. **1**: 2384, 1922.

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SUMMARY

In a case of cancer originating in the islands of Langerhans, hourly doses of glucose were required to prevent convulsions from spontaneous hypoglycemia. When the ingestion of the necessary sugar was delayed, the blood sugar fell below 0.03 per cent. The blood phosphates fell with the sugar and rose again on the restoration of the blood sugar. The liver functioned normally in deaminizing amino-acids and excreting bile and test dyes, but the glycogen stores proved abnormally stable to the action of epinephrine. Necropsy revealed a liver weighing 3,300 Gm. and containing 8.25 per cent of glycogen, carcinoma of the pancreas, and carcinomatous metastasis to the liver and lymph nodes. The cells of this cancer bore a striking resemblance to the cells of the islands of Langerhans, and alcoholic extracts made from the cancer tissue in the liver acted like insulin on injection into rabbits.

DENTAL INFECTIONS

SYSTEMIC MANIFESTATIONS AND BACTERIOLOGIC OBSERVATIONS

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NEW YORK

In recent years much has been accomplished through the cooperation of the physician and the dentist in correcting systemic infections having their origin in the oral cavity. Heretofore, comparatively little attention has been paid to the teeth and gums by the examining physician; but since the recognition of the importance of focal infection and of the close relationship between diseased teeth and gums and systemic disturbances, the superficial oral examination of yesterday has given way to the more rigid examination of today. In many instances, when the systemic condition has not yielded to any other form of treatment, therapeutic measures directed toward the elimination of oral infections, apparently the primary focus, have resulted in definite improvement, if not complete convalescence.

Too often, in cases of suspected focal infection, extraction of the teeth has been carried out without resultant change in the general condition. Doubtless, many of these teeth could have been saved had the physician and dentist consulted before operation. It is to be regretted that such consultations are not more frequently held in cases of this type.

Dentists who have faithfully applied themselves to the solution of the all important problem of dental foci realize that the ills to which human flesh is heir do not all have their origin in the oral cavity. The question arises, When and how are we to determine whether the teeth and gums are the cause of the systemic infection? In this connection must be considered the subject of dental diagnosis, which heretofore has been sadly neglected, and which, in my opinion, plays a very important part in tracing oral infections that manifest themselves in systemic disturbances.

I do not know of any diagnosis more difficult to make than that of a dental infection with a systemic expression of disease. It is not often that a patient suffering from arthritis, neuritis, endocarditis, stomach ulcer, conjunctivitis or other disease that may have its origin in the oral cavity comes to the dentist for diagnosis. There is no reason why such patients should consult the dentist primarily, as it does not come within his scope to treat these diseases. They should be referred to the dentist for dental diagnosis or for treatment by the attending physician. Cooperation between the physician and the dentist is indispensable and should have its genesis in the medical and dental colleges.

The physician, before making his diagnosis, obtains as nearly as possible a complete medical record of his patient. The dentist, too, should know the medical as well as the dental history before making a diagnosis of systemic infection of dental origin. Unfortunately, the question of dental diagnosis has never been considered seriously by the physician, probably because the pathologic manifestations of oral infections have never been forcibly enough brought to his attention. This, no doubt, is due to the fact that dental pathology has had no status in the medical curriculum.

When a patient presents a pathologic condition, and the physician is in doubt as to its origin, the teeth, gums and sinuses should always be eliminated as possible sources of infection. In these cases a dentist familiar with this type of work should be consulted in making such a diagnosis. Only a dentist with a broad hospital experience is in a position to arrive at a correct conclusion in these cases. I say hospital experience, because in our offices we see comparatively few dental foci cases, as compared to the number we see in the hospital, where the opportunity of studying such cases with the friendly cooperation of the physician is presented.

The following is my method of making a dental diagnosis in cases of focal infection:

1. A thorough medical history is secured.
2. Data on blood pressure, blood count, Wassermann reaction and urinalysis are obtained. It is advisable to get this information through the physician, as the patient may not be willing to give it to the dentist. The medical history, as will be shown later, plays a very important part in dental diagnosis.
3. A thorough clinical examination is made of the teeth, gums and sinuses.
4. A roentgen-ray examination of the teeth and sinuses is made.
5. Each tooth should be eliminated as a possible cause of infection.
6. As accurately as possible, the date when each treated tooth was filled or crowned should be known to the dentist, as it is my experience that in patients suffering from systemic disease there is generally a definite period between the time the tooth becomes infected and the first expression of the systemic sequelae. This varies in different patients, depending on individual resistance and immunity.

For example, if a patient presents a systemic disturbance of five years' standing and one wants to rule out the teeth as a possible primary cause of this infection, the dental history of each pulpless and pyorrhetic tooth must be obtained, and if the medical history antedates the dental history, I am of the opinion that the teeth are not the direct cause of the infection. Nevertheless, these teeth should be treated. On the other hand, if the dental history precedes the systemic disease, then I would consider the teeth as a possible primary focus, granting that every other focus has been ruled out. There are cases in which the teeth, sinuses and other parts may all be contributing factors in systemic infections. In these cases, the dental medical history should help one in determining the primary

focus, and each source of infection should be corrected. Then again there are patients who may have infected teeth with old dental histories but have never had a systemic disturbance. It is no less important to treat the teeth in these cases, as one cannot prognosticate the duration of this immunity.

To become experienced in hospital dentistry is now comparatively easy, as a result of the establishment of authorized dental departments in most of the more modern hospitals. Formerly, the dentist in the hospital was used only in emergencies, to extract teeth or to alleviate toothache. The importance of dentistry and its necessity in the hospital were forcibly brought to the attention of the medical profession by Dr. Charles Mayo and by the researches of Rosenow and Billings, and today as a result the medical profession realizes that dentistry means more than the filling and extraction of teeth—that it is a specialty of medicine.

Every hospital should have a dental department and at least one dental intern. The dentist should have the cooperation of the bacteriologic and pathologic laboratories. He should be permitted to make a diagnosis in all cases, making rounds with the physician. This will not only give the dentist an opportunity to see the medical side of cases but also enable the physician to grasp the dental aspect of a case at first hand. It will raise the standard of dentistry, and the dentist, on graduation, will as eagerly seek to be associated with a hospital as does the physician. The practice of dentistry in the hospital today is as important as any branch of medicine, and I believe the medical profession realizes this more and more each day.

Mount Sinai Hospital has a dental staff of thirty-seven men. The chief makes a dental examination in all ward cases. His report is part of the hospital record, and appears on the regular medical charts. There is also an outpatient department to care for dispensary cases, as the dental department in the hospital is for bed patients only. The dentists have received the sincere cooperation of the medical and surgical staffs.

The fact that a tooth has a porcelain or a gold crown or has a large filling does not mean that it is diseased. The crowning of teeth should be the last thing resorted to, but there are occasions when it seems that no other restoration will satisfactorily answer the purpose. As a rule, this type of tooth involves root work. Teeth that have been properly sterilized before filling and have had crowns made to fit accurately do not necessarily become infected. Crowned teeth are frequently justifiably condemned, not for the fact that they are crowned, but because of faulty root canal filling and the infection that these canals harbor at and around the root apexes. The crown should not be condemned for this, although it invariably is.

To make a thorough diagnosis, one should secure roentgenograms of all the teeth, and if there is any doubt as to a tooth, it should be roentgenographed from different angles. Before expressing an opinion as to the conditions found, one should examine the films in conjunction with the physical examination of the tooth in question, for I have seen many incorrect diagnoses rendered by commercial laboratories, although the roentgenograms were good. The fact that a root canal roentgenographically shows a complete filling does not mean that the canal is not infected, nor, when a canal is not completely filled, does it mean that it is infected. The roentgenograms do not always show pathologic conditions. I believe that the only way a root canal can be tested as to its pathogenicity is bacteriologically through the cultural method. The roentgen ray merely assists in the diagnosis, and is by no means conclusive.

To obtain cultures from a suspected tooth, complete asepsis must be maintained and every step carefully followed in the technic, if pure cultures are to be grown. Contaminations are due to faulty technic. I have taken more than 200 cultures with only two contaminations. When taking cultures from teeth to be extracted, the following method should be used: Paint the gums with tincture of iodine on the lingual and labial sides, then wash with alcohol, insert sterile cotton rolls or sponges labially and lingually, and hold them in place; remove the tooth, having the culture tube ready. Then pass a platinum loop through the flame a few times to make sure it is sterile; permit it to cool, take a smear from the apical end of the root, open the culture medium tube carefully, passing the lip of the tube over the flame; insert the loop into the medium, mixing it well; then pass the neck of the tube once more over the flame, and insert the cotton plug. If this is carefully done there is no reason why a pure culture should not be obtained.

In taking cultures from pyorrhea pockets, sterilize the gums in the same manner, hold the cotton rolls in position with the fingers, and insert the loop well into the pus pocket before adding the culture material to the medium. The same precautions regarding sterilization of the loop and the mouth of the culture tube should be observed.

The further treatment of the cultures should be entrusted only to a skilled bacteriologist, for on his work depends the correct etiologic diagnosis and on his technic the production of a potent vaccine, if such is required. The most convenient culture medium for the dentist is glucose bouillon.

The complicated laboratory technic involved in the isolation and classification of bacteria must necessarily take from three to four days. A bacteriologic diagnosis rendered in twenty-four or thirty-six hours is open to the suspicion of work inaccurately done.

After all the foci have been removed, the patient is given a rest for at least four weeks. In many cases there is a complete recovery from the systemic disturbances after the removal of the infected foci, but in some there is not. If the patient, on his return, does not show marked signs of improvement in his systemic condition, the use of an autogenous vaccine is indicated, given by the physician. In no instance has the use of autogenous vaccines been followed by deleterious results.

Vaccines should be administered every fourth or fifth day over a long period. Usually twenty injections constitute a series. The increase of dosage and the interval between doses will depend on the reaction of the patient to the vaccine. This must be determined by the physician.

In 200 cases, bacteria were found as follows: 144 cases, *Streptococcus viridans;* twenty-three, *S. salivarius;* nineteen, *S. faecalis;* six, *S. nonhemolyticus* number 2; two, *S. ignivis;* two, *S. mitis;* one, *S. equinus;* one, *Bacillus coli-communior,* and two, *Staphylococcus albus* (contaminations).

In all these cases there was a history of systemic disturbance, the diagnosis of which was made by the physician. Roentgenographically, all showed definite changes at and around the root apexes.

The dental history preceded the medical history.

Of nineteen patients in whom *Streptococcus faecalis* was recovered, seventeen gave medical histories of gastro-intestinal disturbances.

Thirty-three received autogenous vaccines. These vaccines were administered from four to six weeks after the extraction of the teeth, and only when the patients did not show definite signs of improvement after tooth extraction. All but two of these cases showed definite signs of improvement.

Fig. 1 (case 1).—Appearance of patient before and after treatment.

In fourteen cases, the teeth showed definite infected areas roentgenographically. These teeth were opened, and cultures taken from them showed infection. They were treated, and subsequent cultures were found sterile and remained sterile. This root therapy was continued over a period of eight months. The extraction of all pulpless teeth should be condemned, for there is no reason why a carefully trained operator cannot save many teeth that are needlessly extracted.

REPORT OF CASES

CASE 1.—Mrs. A. B., aged 23, with one child, an infant 4 months old, came to the eye clinic of Mount Sinai Hospital, April 9, 1923. She had had pain and redness of the right eye for two days. Examination showed a marked ciliary infection, deposits on Descemet's membrane, a very deep anterior chamber, pupil dilated and irregular. The media were so hazy that the fundus was not visible. The deposits on Descemet's membrane were very large and numerous, and looked like mutton fat. Vision: right eye, movements of the hand; left eye, 20/50.

The diagnosis was not difficult. This was a typical case of uveitis. It is the etiology in such cases that usually is obscure. In this case the Wassermann reaction was negative. A tuberculin skin test was also negative. Transillumination of the nasal sinuses was negative. The patient was referred to me for dental examination, and I reported as follows:

"Oral examination showed bridgework on the upper and lower teeth. Roentgenographic examination showed many infected teeth underneath this bridgework. Advised the removal and culture of the infected teeth."

Local treatment (atropine and hot compresses) was given for two days without improvement. Salicylates in increasing doses during the next nine days produced slight improvement. The pain was relieved and the infection reduced, but the vision was still obscured by haziness of the cornea and cloudiness of the aqueous and vitreous. Deposits on Descemet's membrane stood out as huge gray spots, covering nearly the whole area of the cornea.

Eleven days after treatment was begun, four teeth were extracted. Within seven hours there was a definite and decided improvement, noticeable to the patient herself. The vision suddenly cleared up. She could even read print, despite the fact that the eye was under the influence of atropine. April 25, five days later, the vision of the right eye was 20/70; there were still numerous deposits on Descemet's membrane, but the cornea between the spots was clear, and the fundus could easily be seen with the ophthalmoscope.

It must be noted that salicylate treatment had been stopped at the time dental treatment was begun, because the patient was nursing her infant and the medication was apparently affecting the child.

From this time on, improvement was steady and continuous. More teeth were extracted until all infected foci were removed. The big gray deposits were absorbed, and replaced by small brown pigmented spots, which in turn gradually disappeared, and the patient was discharged, July 20, without active signs of eye disease. At that time her vision was:

Right eye, 20/50 with 1 sph. — cyl. 2/75 ax 180 — 20/40 + 2;
Left eye, 20/50 with — 2 cyl. axis 180-2/40 + 2.

There is no record of a recurrence since then (1923).

CASE 2.—Mrs. T. R., aged 50, seen Sept. 18, 1923, complained of severe pains on the left side of the face, paralysis of the right side of the face, and loss of sight in the right eye.

About eight years before, the patient had had a severe pain on the right side of the face. She consulted a physician, who, after a thorough examination, referred her to a dentist. The dentist reported that her teeth were in good condition. Medicinal remedies did not alleviate pain. She returned to her physician, who diagnosed the case as tic douloureux. A surgeon gave alcoholic injections into the nerve, after which she was sent to a sanatorium for rest. The pains grew worse. The surgeon stretched the nerve, as the patient described the operation. The pain subsided for about four weeks, then returned as severe as before. Electric therapy was resorted to in vain. Another operation was advised. This time a section of the sensory roots of the fifth nerve was performed; the pain subsided, but the patient developed a paralysis on the side of the operation, with loss of sight in that eye.

She was then referred to an ophthalmologist, who advised the extirpation of the eye; but this was refused though two other ophthalmologists concurred. Local treatment of the eye was continued for six years. One morning pain developed on the other side of the face, and, fearing another operation, the patient threatened suicide.

After I had examined the patient, I reported both to the physician and to the ophthalmologist that the patient gave a history of focal infection of dental origin, and that the roentgenograms showed impacted and many infected teeth that were

Fig. 2 (case 1).—Appearance of teeth before treatment.

the probable cause of the pain and of the eye symptoms. Neither concurred in this diagnosis. Firmly convinced of the accuracy of my diagnosis, with the consent of the patient, I proceeded to extract the teeth. The day following the extraction of the first tooth the patient reported to me that vision had returned to her right eye. I referred her to her ophtalmologist and asked for another examination, and his written diagnosis. He reported that the dentist had apparently performed a miracle. His diagnosis was neuroparalytic keratitis. The infected teeth were removed at intervals of forty-eight hours or more. Symptoms completely disappeared, and the patient was discharged as cured. A final examination of the eyes in December, 1926, showed a marked restoration of vision. The prompt subsidence of symptoms following the extraction of the infected teeth seems incontrovertibly to prove that the oral

infection was the primary condition and that the eye changes were secondary to it. Bacteriologic cultures from the infected teeth showed a pure growth of *Streptococcus viridans.*

CASE 3.—W., a man aged 33, seen, May 9, 1918, had had pain in the right sacro-iliac joint and in the region of the sciatic nerve for the past three years. The most severe pain was at night. Medical treatment afforded only temporary relief. Electric treatment was of no avail.

Oral examination revealed the upper right second bicuspid partly broken down, but no pain was felt on percussion and the other teeth clinically looked normal. The upper right second bicuspid had been treated eight years before and up to the time of examination the patient had not complained of pain or annoyance from this tooth.

Roentgenographic plates showed that the upper right second bicuspid had a marked area of rarefaction around the apex of the roots with a very thin anterior wall. I advised the removal of this tooth, but the patient would not consent, saying that he was willing to go through with any treatment to save the tooth. I told him that the treatment would extend over a long period, and the final outcome might be extraction. He was willing to take this chance, so I proceeded with treatment.

The tooth was opened and considerable difficulty was experienced in reaching the apex. A sterile point was placed in the canal and left for forty-eight hours, after which it was removed and put into a culture tube of acetic acid broth. A pure culture of *Streptococcus viridans* was obtained in seventy-two hours. The root canal was sterilized, and after about eight weeks another culture was taken; this was sterile. The canal was sealed with a sterile dressing, and at the end of a week another culture was taken, which was also reported negative. Subsequent cultures taken thirty days later and again after three months having proved sterile, the canal was permanently filled. During the intervals between the cultures, the canal was occluded with a sterile dressing.

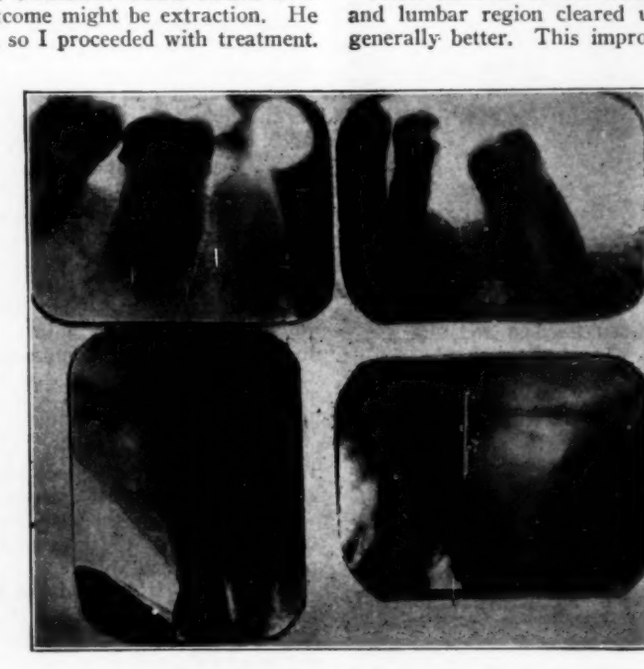

Fig. 3 (case 5).—Appearance of teeth.

Twenty-four hours after the root canal was first opened, the patient reported marked lessening of the sacro-iliac pain that had previously been interfering with sleep. Analgesic capsules (acetylsalicylic acid and amidopyrine) that had been taken daily over a period of two years were gradually discontinued. As the root treatment proceeded, both the pain and the insomnia gradually subsided. All symptoms had completely disappeared by the time the roots were finally filled. Seven years has elapsed without any recurrence of dental or medical disturbance.

CASE 4.—Mrs. M. H. R., aged 50, examined, Dec. 5, 1923, had a marked pyorrhea, and bridgework on the upper and lower teeth. Roentgenographic examination showed many infected teeth which had been treated some eighteen years before. The infected teeth were extracted. The culture yielded *Streptococcus faecalis.* The patient was then referred to Dr. George Baehr, who reported the following medical history:

The gallbladder was removed in 1913. About this time the patient began to experience vague symptoms which were always referred to as chronic constipation. At frequent intervals she would feel very poorly, look pale and sallow, and become highly nervous and irritable. In addition, she would suffer from insomnia during these periods, and would complain of dull pains in different parts of her body. Recently during such a period of vague illness she had had pain in the right side of her back in the lower lumbar region, which radiated down the back of the right leg and ankle along the distribution of the sciatic nerve.

Physical examination was entirely negative, except for slight tenderness over the sigmoid. Systolic blood pressure was 130. In December, 1923, the patient again presented herself for oral examination and an apical abscess was found at the root of a tooth, from which a pure culture of *Streptococcus faecalis* was obtained.

The clinical picture consisted of two phases: First, periods of vague symptoms when the patient felt bad and looked poorly, and became nervous and irritable. This condition had always been referred to absorption from the intestinal tract, but a prolonged treatment with bowel irrigations failed to produce any permanent improvement. The second phase of the clinical picture consisted of attacks of pain such as the one just described, in the lower lumbar region, radiating along the distribution of the right sciatic nerve. These pains usually coincided with the periods of vague illness and suggested the possibility of a focal infection as the causative factor.

After removal of the infected teeth, the pains in the back and lumbar region cleared up and the patient seemed to be generally better. This improvement lasted about four weeks, after which the symptoms returned. It was suggested that autogenous vaccine be given. After the fourth inoculation the patient steadily improved, and was finally discharged as cured.

The patient had not had any recurrence of the systemic condition up to April, 1926.

CASE 5.—J. J., a man, aged 43, born in the United States, admitted to Mount Sinai Hospital (service of Dr. Harold Neuhof), March 27, 1923, with a diagnosis of chronic ulcer of the leg, had had spondylitis and multiple joint infections for many years. In September, 1922, an incision had been made on the lateral aspect of the left leg for an abscess.

The patient was emaciated, with almost complete fixation of the vertebral column and other joint involvement. On the lateral aspect of the left leg there was a long wound reaching from the knee to the ankle, with a profuse discharge of pus. It was grossly contaminated, and no granulations were seen on its sloughing base. There was a marked odor.

Macroscopic oral examination, March 31, revealed the teeth in very poor condition, with many large fillings.

April 6, the roentgenographic diagnosis was: many infected teeth with antrum involvement. The lower right second molar had been removed. Adherent to the anterior root was a large (granuloma) pus sac. Cultures from the posterior root and abscess sac yielded *Streptococcus viridans* in pure culture, from which a vaccine was made.

April 12, the upper left second molar was removed. The mesial root was found to perforate the maxillary sinus. Shortly after the removal of the infected teeth the odor from the leg subsided.

Local treatment consisted in the use of various methods to improve condition of the wound, including surgical solution of chlorinated soda dichloramine, scarlet red, and silver nitrate solution. All these methods, however, resulted in only very temporary improvement, followed by exacerbations. It was therefore determined to discontinue all treatment except bland wet dressings. Thiersch solution was used for this purpose. There was slow improvement in the wound, and by May 1, it was healing in the lower half.

Stereoroentgenograms of the lower half of the left leg, including the ankle joint and the tarsal bones, showed a marked

absorption of the lime salts (atrophy) of the lower third of the tibia and fibula, as well as of the lower tarsal bones. There was also marked swelling of the soft tissues, particularly adjacent to the fibula. The appearance of the bones was not that of an inflammatory process, such as osteomyelitis, but rather of the atrophy of disuse. It must be remembered, however, that early osteomyelitis is not always demonstrable by roentgen rays. Roentgenograms were also made of the upper two thirds of the left leg. These did not show abnormality in the upper two thirds of the tibia and fibula, and the apparent changes seemed to be due to the dressing. There was a moderate degree of arthritis in the knee joint.

The vaccine which was made from the lower right second molar was given, April 28, 1923 (first treatment), and continued to May 24, 1923.

Shortly after the vaccines were given, the patient gained 7 pounds (3.2 Kg.), and was discharged from the hospital, June 13, 1923.

In December, 1924, the patient reported that he had resumed business and had gained 27 pounds (12.2 Kg.).

Oct. 27, 1925, the patient again complained of loss of weight for which medical examination failed to discover any cause. The possibility of further dental infection was considered by the attending physician. Subsequent to the tooth extractions in 1923, bridgework had been done by another dentist. The patient was now again referred to me to determine the advisability of resuming vaccine treatment.

A macroscopic dental examination showed bridgework on the upper and lower teeth. A roentgenographic examination revealed definite infected areas on the roots of the teeth which acted as abutments for the bridgework. The pulps of these teeth had been removed in July, 1923, and the canals must, therefore, have become infected thereafter. The infected teeth were removed and cultures were taken, *Streptococcus viridans* being recovered. An autogenous vaccine was administered. The physician reported in June, 1926, that the patient had been steadily improving under treatment, and had gained in weight and returned to work.

CONCLUSIONS

1. Patients suffering from a focal infection which has its origin in the oral cavity do not necessarily have to have their teeth removed.
2. The medical as well as the dental history of the patient should be known to the dentist before any dental intervention is undertaken.
3. The dentist must have hospital training before he is properly equipped to diagnose such cases.
4. Full cooperation between the physician and the dentist is indispensable.
5. Every hospital should have a dental staff and at least one dental intern, as the training of the physician does not include dental diagnosis.
6. The dentists doing hospital work should organize and decide on a definite procedure in handling cases of focal infection that have their origin in the oral cavity. Not until then will they receive the full cooperation of the medical profession, which is not encouraged by the lack of unanimity of opinion among dentists at present.

5 East Fifty-Seventh Street.

Correlation Between Cultural and Biologic Change.—The cultural change over the past two thousand years has been extraordinarily great. Therefore there appears to be for this period no correlation between cultural changes and biological changes. Cultural evolution is thus not to be accounted for by biological evolution. Indeed, since the last ice age it may be that the vast cultural growth has taken place without any significant biological evolution in man. Once given a level of biological equipment, culture may go on increasing at a rapid rate without any biological change. The significance of the biological factor for the study of social evolution is thus somewhat more limited than is usually thought.—Ogburn: Social Change, pp. 141-142.

CLINICAL IMPORTANCE OF THE OS TIBIALE EXTERNUM, OR ACCESSORY TARSAL SCAPHOID

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The frequency of supernumerary bones about the foot is not generally known, nor their significance well appreciated. In various special journals attention has

Fig. 1.—The os tibiale externum is a true part of the skeleton, and occurs in about 10 to 14 per cent of otherwise normal feet. It is often unilateral rather than bilateral, and in many instances it has been mistaken for a fracture. It is essential that, in differentiating it from a fracture, there appear a true demarcation line between it and the scaphoid.

Fig. 2.—Accessory scaphoids in a child, aged 11 years: feet badly pronated, scaphoids very prominent.

been called to these anatomic abnormalities, but as a whole the medical profession is uninformed in regard to them, and therefore possibilities of mistakes in diagnosis still exist. The occurrence or presence of these

extra bones has been known to anatomists for many years and their discovery was not dependent on the advent of the roentgen ray. They were discovered in the dissecting room. Vesalius in 1555, Bauhin in 1605 and Rosenmuller in 1804 described several of these accessory bones from anatomic dissections.

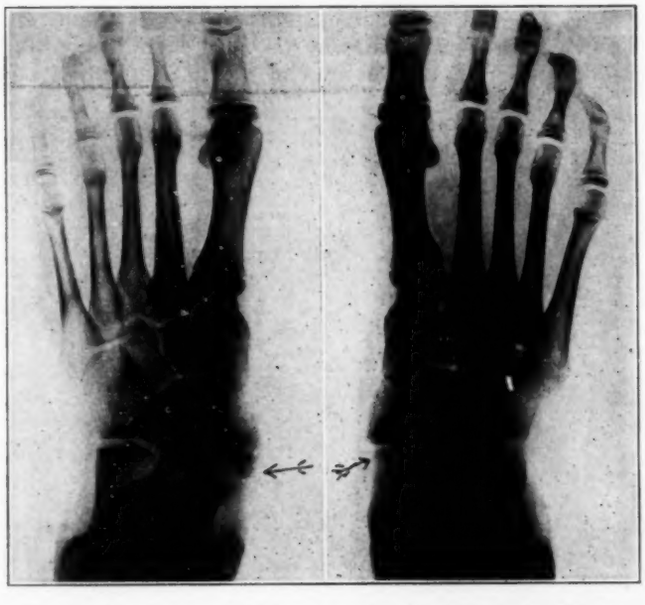

Fig. 3.—Accessory scaphoid larger on the left than on the right, in a child, aged 15 years. Clinically, the feet are badly pronated, with very prominent scaphoids.

The special abnormality to which I call attention is the so-called os tibiale externum, or accessory scaphoid, first described by Bauhin in 1605. This bone has been confused with what was thought to be a sesamoid fibrocartilage in the tendon of the tibialis posticus as it goes under the scaphoid bone. Evidently, when such a condition existed there was an accessory scaphoid

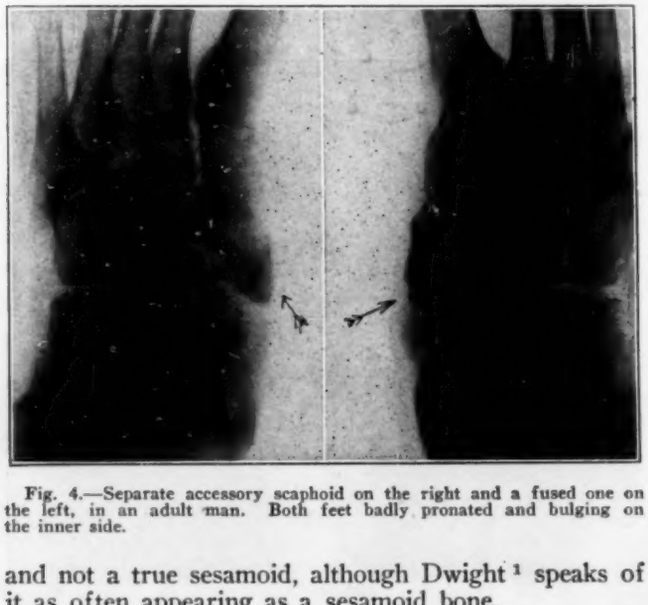

Fig. 4.—Separate accessory scaphoid on the right and a fused one on the left, in an adult man. Both feet badly pronated and bulging on the inner side.

and not a true sesamoid, although Dwight [1] speaks of it as often appearing as a sesamoid bone.

The presence of this abnormality can be easily detected by roentgen-ray examination of the feet. Geist [2] found that it existed in 14 per cent of a hundred patients who had never had any trouble with their feet. In his series of cases it was generally unilateral.

The bone may be unilateral or bilateral. It may be separate from the scaphoid on one foot and fused with the scaphoid on the other foot. Rarely is it seen before 9 years of age, but by 11 may be easily discovered in a roentgenogram of the feet. It can best be seen in the view taken from the top of the foot looking toward the sole. As the patient grows older, one accessory scaphoid may become larger than the other, and one may fuse with the body of the scaphoid, as mentioned, so as to make a large and rather hooked process presenting on the inner aspect of the scaphoid. This results in a very prominent and bulging inner border of the foot.

Zadek [3] has recently reported a number of cases in which he believes that the presence of the bony abnormality is also associated with a lack of proper insertion of the tibialis posticus tendon. He states that in these cases the tendon is entirely or mainly inserted into the scaphoid, and he considers this an anatomic abnormality. Normally, this tendon is inserted into the tuberosity of the scaphoid and internal cuneiform bones, and gives off fibrous expansions, one of which passes backward to the sustentaculum tali of the os calcis, others outward to the middle and external cuneiform and cuboid, and

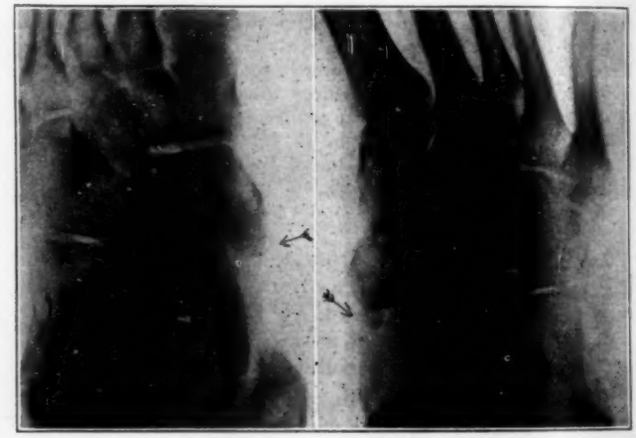

Fig. 5.—Accessory scaphoid on the right, separate, and a fused one on the left, in an adult. Both feet badly pronated, but without symptoms. These accessory scaphoids were discovered as the result of roentgen-ray examination for a fracture of the os calcis of each foot.

some forward to the bases of the second, third and fourth metatarsal bones. Zadek has not made clear in his report that the insertion of the tendon in his cases varied to any particular degree from the normal insertion, in that its major insertion is on the under side of the scaphoid in all feet.

CLINICAL SIGNIFICANCE

There are several reasons why this abnormality should be familiar and easy to recognize:

1. The presence of such a condition is of medicolegal importance, especially following trauma, because of the possibility of its being mistaken for a fracture.

2. It is generally associated with badly pronated and weak feet, which are particularly resistant to corrective treatment.

3. In such feet, with accessory scaphoids, radical treatment is necessary, such as an astragaloscaphoid arthrodesis to prevent discomfort and increasing deformity, provided always that the feet are painful or otherwise a source of disability.

1. Dwight, Thomas: The Clinical Significance of Variations of the Wrist and Ankle, J A. M. A. **47**: 252 (July 28) 1906.
2. Geist, E. S.: Supernumerary Bones of the Foot, J. Am. Orthop. Soc. **12**, number 3 (Jan.) 1915.
3. Zadek, Isadore: Significance of Accessory Tarsal Scaphoid, J. Bone & Joint Surg. **8**: 618 (July) 1926.

The patients' feet in these cases present a rather characteristic appearance. They are, as a rule, generally badly pronated, the scaphoids are markedly prominent, and the whole inside of the foot bulges. After seeing a few of these cases, one comes to suspect strongly the presence of an accessory scaphoid. A roentgenogram is always necessary to confirm the diagnosis and should always include both feet.

Palpation over the scaphoid may or may not cause pain, and often the scaphoid is seen and felt to be enlarged. The patient may not have known discomfort and disability at any age from this condition, but may go through life with symptomless, weak, flat and abducted feet. On the other hand, the feet may be painful, tender, and a source of weakness, leg and back ache, and general discomfort.

After experience with this type of foot showing this congenital abnormality or defect, one is led by lack of success in corrective treatment of the ordinary kind, namely, pads, plates, Thomas heels and exercises, to become radical and advise some operative procedure such as an astragaloscaphoid arthrodesis, as advocated and practiced by many orthopedic surgeons for the relief of deformities of this type.

Removal of the accessory scaphoid at the time of operation is indicated, and if it has become fused with the scaphoid itself, removal of this bony overgrowth is indicated. The tendon of the tibialis posticus should be shortened as well.

Following this procedure, fixation in a cast in an adducted and inverted position of the foot for six weeks, followed by a plate for temporary support and exercises, will give the patient a very good foot.

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THE FUNDAMENTALS AND THE CLINICAL ASPECTS OF LIGHT TREATMENT

WITH ESPECIAL RELATION TO TUBERCULOSIS

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Recent medical literature discloses steadily increasing possibilities for light therapy. Rickets and tetany under its influence show increased phosphorus and calcium of the blood, while calcium deposition takes place in the epiphyses of the long bones. Clinically in tetany, the disappearance of such symptoms as carpopedal spasms, laryngeal spasms and convulsions frequently takes place after exposures to quartz mercury vapor arc and carbon arc irradiations. Lupus vulgaris has healed in a large percentage of cases after exposures to ultraviolet rays from various sources. Extrapulmonary tuberculosis in many forms yields to treatment with artificial light as well as with sunlight radiations. These results have been so clear cut in a large number of cases that a knowledge of light and its clinical applications is fast becoming important to the practitioner of medicine.

Sunlight and air therapy owe their impetus particularly to the work of Bernhard at St. Moritz and Rollier at Leysin, Switzerland. In America, this treatment has been advocated especially by the Perrysburg school, including Pryor, LoGrasso and Hyde. Solar therapy as practiced by these workers includes increasing graduated exposures of parts of the body to sunlight and outside air. It is my aim in this article to compare the physical characteristics of the sources of light used in light treatment as well as their physiologic effects, and the indications and results in their clinical usage.

The pioneer workers in the clinical application of artificial light therapy have been those of the Copenhagen (Denmark) Institute, especially Finsen and his followers, Reyn and Ernst. Finsen emphasized the local application of carbon arc light to superficial tuberculosis, especially lupus vulgaris. Reyn and Ernst stressed general body application with artificial sources

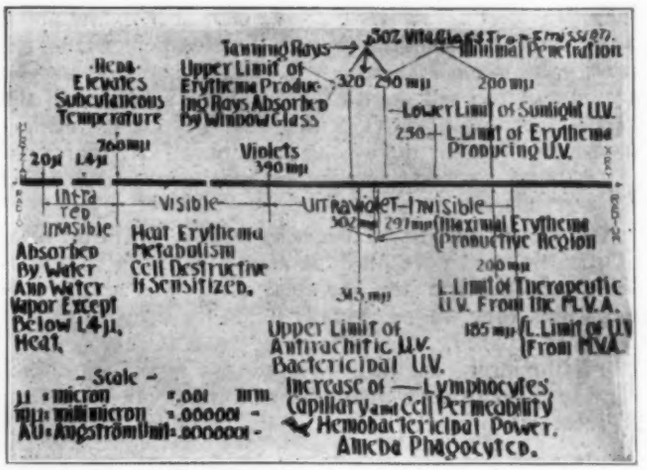

Fig. 1.—Scheme of wavelengths and divisions of the spectrum and their important physiologic effects.

as carried out by others with sunlight. In England, Sir Henry Gauvain has extensively utilized the carbon arc and the quartz mercury vapor arc lamp as well as other artificial sources, alternating with air and solar exposures. Some of my results obtained by the use of artificial sources of light, more particularly the quartz mercury vapor arc lamp, have led to the presentation of this paper. Because of the broad scope of this field of therapy, only brief reference can be made to the more important facts.

SOME PHYSICAL CHARACTERISTICS OF LIGHT

Figure 1 represents the divisions of the spectrum of sunlight, showing the visible region limited on one end by infra-red and on the other by ultraviolet rays. The visible spectrum extends from about 760 to about 390 millimicrons. The lower limit of the visible region may vary with different individuals according to the sensitivity of the retina. The ultraviolet rays of sunlight extend from about 390 to 290 millimicrons, and those of clinically used artificial sources from about 390 to below 200 millimicrons. The ultraviolet rays of a source such as the plain carbon arc of 20 amperes that has been so frequently used clinically extend to about 220 millimicrons (the intensity can vary with amperage and with impregnations in the carbons), while those of the quartz mercury vapor arc terminate at 185 millimicrons.

All wavelengths of radiation appear to possess some heat properties and the ability to influence chemical reactions. As a rule, however, heat production is associated chiefly with the infra-red and the red rays. Light is associated chiefly with the rays from red to violet, while the most active rays chemically are the ultraviolet.

The infra-red rays longer than 1.4 microns are penetrative except for water, while the ultraviolet rays are

rapidly absorbed. The regions of the spectrum vary greatly in their degree of absorption in different substances. Water and water vapor, for instance, absorb infra-red rays to a very great extent except that region close to the visible from about 760 millimicrons to 1.4 microns. The ultraviolet ray loses the greater part of its intensity in penetrating the atmosphere to reach the lowlands.

Quartz, fluorite glass and clear distilled water do not in any degree absorb ultraviolet rays. Ordinary window glass absorbs all ultraviolet radiations shorter than 320 millimicrons. Vitaglass transmits 65 per cent of the ultraviolet rays at 320, 25 per cent at 290, and about 5 per cent at 270 millimicrons. Twelve per cent of the energy between 700 and 400 millimicrons is lost on account of the reflection of light at the surfaces of the glass. Corning glass (Corning [N. Y.] Glass Works) transmits the solar ultraviolet rays more fully than vitaglass, but its cost at present makes its use prohibitive for any but research purposes.

Various thin and porous cloths treated with thin films of paraffin, and wire mesh screens filled with celluloidinous material transmit the solar ultraviolet and visible radiations very well, especially when these materials are freshly prepared. The ultraviolet rays between 320 and 290 millimicrons are probably the best pigment-producing rays; because of their absorption by window glass, it becomes difficult to tan behind such glass. Sand, snow, ice and water increase the intensity of the ultraviolet by reflection; however, the dense humidity over bodies of water may intercept the reflected ultraviolet rays.

PHOTOBIOLOGIC EFFECTS

Red and infra-red rays produce an immediate hyperemia, which, however, soon disappears after the cessation of the irradiation. Infra-red rays longer than 1.4 microns, it has been shown, are more likely through their rapid absorption to produce cutaneous blisters in animals; those below 1.4 microns penetrate the skin. The visible rays provoke vision, heat and metabolic changes; the red rays are able to elevate subcutaneous temperature as much as 3 degrees C. without causing bodily fever. The infra-red and visible rays produce, through heating, a dilatation of superficial capillaries and an increased blood flow and exudation of lymph; but apart from their heating effect, the rays do not destroy cells except when visible rays are exposed to cells which have been sensitized by such substances as eosin and hematoporphyrin. Their heat effects may aid the action of the ultraviolet rays on body cells.

Ultraviolet rays are rapidly absorbed, in most part, by tissues of a depth of less than 1 mm., and produce marked chemical changes. Grotthus' law states that a chemical reaction cannot occur unless suitable radiations are absorbed. Hemoglobin absorbs ultraviolet rays as well as many of those of longer wavelengths up to approximately 450 millimicrons. Blood serum absorbs the ultraviolet rays chiefly because of its tyrosine and tryptophan content. The ultraviolet rays necessary for the prevention and healing of rickets and the production of erythema are those below the region of about 320 to about 313 millimicrons. This region defines also the approximate upper limit of the bactericidal rays, although some experiments have shown bactericidal action with wavelengths at 365 millimicrons. Ultraviolet rays in sunlight extend to the lower limit of 290 millimicrons, but those in artificial sources from 290 to 250 millimicrons are also productive of erythema, as well as bactericidal and stimulative or destructive of protoplasm.

The brownian movement of colloidal particles ceases when exposure to ultraviolet rays coagulates the protoplasm. Egg and serum globulin are formed from albumin under ultraviolet irradiation. Lens albumin previously sensitized by certain salts, such as calcium, sodium and magnesium, silicates or dextrose, becomes sensitive to ultraviolet radiation. Most bacteria are destroyed by rays of wavelength less than 313 millimicrons, the bactericidal effect usually being more marked as the wavelength decreases. Temperature elevation usually increases this destructive action, and changes in the hydrogen ion concentration appear also to play a rôle. Red blood cells in vitro are hemolyzed by ultraviolet energy, possibly because of increased permeability of the cellular membrane and the destruction of the cell stroma. Protoplasm may be so affected by ultraviolet rays as to become especially sensitive to heat radiations. The visible manifestations of tissue hyperemia due to ultraviolet radiation occur only after the lapse of a certain latent period, two hours or more. There probably takes place an absorption into the blood of products of tissue injury or an enhanced absorption of normal tissue products produced by such injury, with consequent erythema and edema. On repeated exposures, a pigment, melanin, is generally formed in the basal cells of the epidermis; this may be due to the action of certain skin oxidases on a break-down product of tyrosine.

Unicellular organisms are stimulated to certain physiologic changes such as fission, or they may be destroyed by ultraviolet radiation, depending on such factors as the intensity of the irradiation, its penetrative power and the size of the organism. Thus, very short ultraviolet rays may reach the cell nucleus. Small doses of light appear to have a stimulating action, while large doses produce deferred physiologic changes, and still larger doses may destroy unicellular organisms. Amebas, otherwise apathetic, have been made strongly phagocytic for other amebas that were exposed to ultraviolet rays.

Cholesterol, a substance found in comparatively large quantities in the skin, is activated chemically by ultraviolet irradiation. This has been shown to be so by isolating cholesterol and rendering it antirachitic by irradiation with ultraviolet rays. It becomes endowed with antirachitic power in some unknown way through the action of the ultraviolet energy from the light source. It has been recently shown that pure cholesterol cannot be rendered antirachitic by the ultraviolet ray. The substance which is made antirachitic appears to be ergosterol, or an allied substance which is found in ordinary cholesterol as an impurity. Likewise, phytosterol of plants is so activated. Many food products, such as fats, oils, milk, vegetables and lettuce, may also become endowed with antirachitic power through exposure to sources of ultraviolet energy. Ultraviolet irradiation of the pregnant mother renders her milk antirachitic. How this takes place is still a matter of speculation; our knowledge of the exact nature of radiation itself is so limited that its effects on tissues or food products becomes doubly difficult to understand.

As reported recently by Macht and Anderson, certain physiologic ultraviolet ray reactions may be greatly intensified by polarizing the incident light.

FURTHER PHYSIOLOGIC EFFECTS OF LIGHT

The increased calcium and phosphorous content of the blood serum in rickets and tetany under ultraviolet

radiation is due in all probability to an increased absorption of calcium from the intestines. Under solar radiations the blood shows increased alkalinity, a fact attributed more to the action of the heat rays.

Radiation occasionally increases red blood cells and hemoglobin, but this chiefly when a preexisting anemia occurs. This has been particularly reported with the use of high amperage carbon arcs. Lymphocytosis in rabbits and possibly in man can be produced by exposure to the shorter ultraviolet rays. Hematoporphyrin injected subcutaneously or applied locally to the mesentery of a frog or mouse sensitizes the vessels to the visible rays, capillary stasis is produced, and thrombi of leukocytes are formed in the vessels at different points along the endothelial wall. Eosin (1:1,000) sensitizes the capillaries to the visible rays, so that stasis is produced by these rays alone. Cell membranes and capillaries develop increased permeability on exposure to ultraviolet rays. Animals kept in darkness from birth can show growth changes differing in no way from those exposed to light, but blood examinations show lowered blood platelets. On exposure of these animals to quartz mercury vapor arc radiations, the number of platelets has rapidly increased to normal. There is also evidence that the coagulation time is decreased.

Basal metabolism is increased only slightly, if at all, by light exposures alone. E. H. and H. H. Mason have reported even a drop in many cases. It can be markedly increased by exposure to moving air. Increased heat output by radiation under a provoked hyperemia demands increased metabolism. Increased mineral metabolism is definitely provoked by light alone to give increased urinary output of nitrogen, phosphorus, sulphur and chlorides. Under exposure to light, respiration is decreased in rate, but increased in depth. Increased body heat production obviously demands accelerated vital reactions. The rate of growth may be increased under the action of light.

The increased physiologic action of the skin under exposures to light may be presumed; namely, increased respiratory, excretory and protective powers. It is rare to find acne developing in tanned skin. During an epidemic of chickenpox at Rollier's clinic, cutaneous vesicles were not found on tanned skin, whereas they did appear on unexposed areas beneath plaster casts. Erythema of the skin produced either by heat or chemical radiations is accompanied by transitory increased bacteriophagic and bacteriolytic power of the blood serum and leukocytes for streptococci, pneumococci and staphylococci. From an apparently lifeless, toneless and flabby skin, exposures to light often produce a soft, velvety, colorful tissue. Under exposures to solar radiations and to artificial sources of light, especially with combined exposures to moving air, remarkable muscular tonus has been produced in unused muscles, despite prolonged application of immobilizing casts.

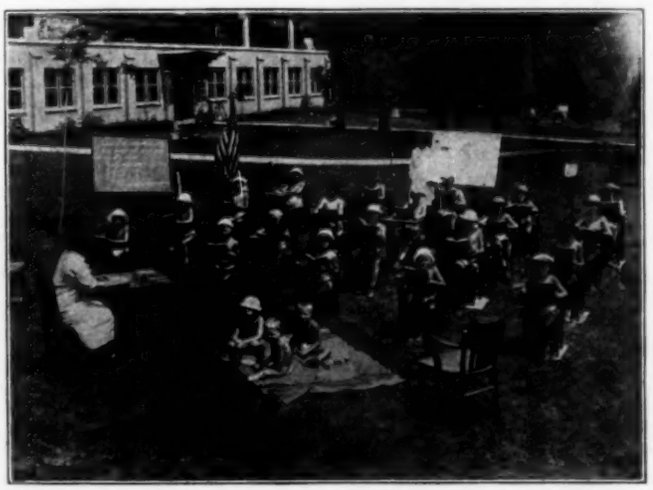

Fig. 2.—Outdoor school at Onondaga County Sanatorium, Syracuse, N. Y. (Courtesy of Drs. Brayton and Walsh.)

The action of light on the body is in all probability largely an indirect one by way of the cutaneous cells, nerves and blood vessels. Ultraviolet rays for the most part are absorbed by the epidermis; however, deeper penetration of the longer visible rays and of the shorter infra-red ray may allow of some slight direct action, but there is little cause to believe that this can be of much direct therapeutic value. Therefore, penetration should not be stressed as the factor for the interpretation of physiologic effects. Heat rays and heat effects of luminous rays may increase and hasten the effect of ultraviolet energy, but when minimal doses of ultraviolet rays are used, red rays have been shown to act antagonistically.

LIGHT AND MOVING AIR FROM OUTDOORS

Light application necessarily requires consideration of accompanying moving or open air. With lamps, moving air from outdoors should be employed, if possible. Air movement produces increased heat radiation and conduction with better respiration and excretory function of the skin. Moving air acts directly on the vasomotor system, stimulating the superficial capillaries, producing a hyperemia and, in turn, a depletion of the cutaneous circulation. This, acting as a massage, may be responsible for the development of muscle, otherwise immobilized in treatment. With sunlight therapy, the effect of moving open air is greater, but air exposures may well be utilized with artificial light therapy through satisfactory ventilation of the treatment room. Carbon arc lamps may be effectively used outdoors in cloudy warm weather. However, chilling should always be avoided even at the expense of losing the air movement when one is employing artificial sources of light.

SUNLIGHT VERSUS CARBON ARC AND QUARTZ MERCURY VAPOR ARC LAMP

Clear midday sunlight emits intense ultraviolet rays from 300 to 297 millimicrons. Those around 290 millimicrons, its lowest limit, are in intensity about one millionth of those around 310 millimicrons. Its emission of visible and infra-red energy is very high.

Proponents of solar therapy have insisted on the use of radiation having a spectrum with components relatively like those of sunlight. The clinical results with solar exposures have been most favorable in the hands of these workers. Sunlight possesses an advantage in the favorable psychic reaction which makes the patients much more willing to submit to prolonged periods of exposure. Yet there is empiric evidence and some theoretical basis for expecting very favorable therapeutic results with other combinations of light rays. It may logically be reasoned that certain forms of tuberculosis, especially the superficial, are more responsive to greater intensity of short-wave ultraviolet radiation than exists in sunlight itself. Empirically, even with other forms, I have noted this response in the use of the

mercury vapor quartz light. With lamps, the available light energy is constantly at hand and the dosage is easily controlled.

Quartz Mercury Vapor Arc Light.—From 1 to 5 per cent of the total output of the energy of sunlight is in the ultraviolet rays, the variation dependent on the geographic location, season of year, time of day and

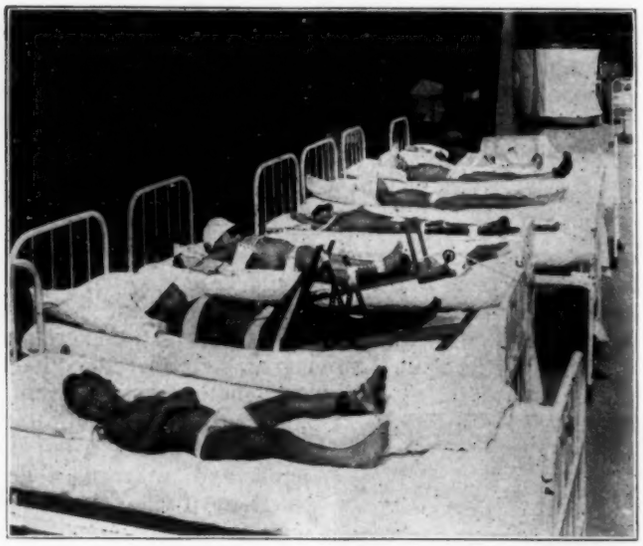

Fig. 3.—Various forms of extrapulmonary tuberculosis treated with lowland sunlight at Onondaga County Sanatorium, Syracuse, N. Y. (Courtesy of Drs. Brayton and Walsh.) Bed 1 (reading from foreground to background), tuberculosis of the upper conjunctiva and ankle. Bed 2, tuberculosis of the elbow and knee. Bed 3, tuberculosis of spine; patient lying on Bradford frame. Bed 4, tuberculosis of the hip (with traction) on Bradford frame. Bed 5, lymphatic tracheobronchial tuberculosis. Bed 6, cervical lymph node tuberculosis. Bed 7, spinal tuberculosis (netting covering discharging sinuses).

kind of weather; but the total output of the solar "near ultraviolet" is high when one considers the total intensity of sunlight. As against the mercury arc, it lacks the short ultraviolet ray below 290 millimicrons. The quartz mercury vapor arc lamp emits a marked preponderance of ultraviolet energy in relation to its total output. It emits relatively much less visible and infra-red energy than does sunlight; most of the infra-red comes from the heated quartz, the electrodes, the supports and the reflecting hood. About 17 per cent of its ultraviolet rays (the total ultraviolet being considered 100 per cent) are of shorter wavelengths than the lower limit of sunlight. The lower limit of its radiation is 185 millimicrons, but in therapy it is rarely below 200 millimicrons. Its upper limit of radiation is about 12 microns in the infra-red. The radiation less than 450 millimicrons represents two thirds of all radiation below 1.4 microns. It consists of a weak continuous spectrum down to 250 millimicrons and a number of spectral bands of high intensity from 450 to 185 millimicrons. Quartz allows the transmission of the rays from 185 to 320 millimicrons which are not transmitted by window glass. Greater intensity of ultraviolet emission occurs after the first five minutes' operation of the lamp.

Carbon Arc.—The spectral components emitted by the carbon arc are similar to sunlight but vary in intensity. The total radiation emission and the relative intensity of some of its spectral components may be altered by varying the voltage and amperage, by altering the diameter of the carbons, and by impregnating the carbons with suitable metals or salts. The plain carbon arc of low amperage (from 3 to 10 amperes) has proved of clinical value in local applications; those of higher amperage (20 or more amperes), especially those burning impregnated carbons, have been reported effective in general body exposures. The high intensity arc has an output of total energy closest to sunlight. Nickel, iron, titanium, aluminum and tungsten are all employed for impregnating the carbons. Groups of (from 20 to 29 amperes) carbon arc lamps are often used for irradiation of several bed-ridden or ambulant patients; high amperage lamps (from 50 to 125 amperes) are, as a rule, used chiefly for groups of patients. The Schwartz arc recently reported in use at the Cincinnati General Hospital, utilizing 90 amperes, can irradiate twelve or more patients at a time. The cost of installation, the operation charges of large carbon arcs and the care necessary make them useful chiefly for the handling of groups of subjects in institutions.

Enclosed carbon arcs have not proved as efficient as the open arcs. Of the ultraviolet rays, the ordinary carbon arc of Finsen emits chiefly the longer; that below 300 millimicrons is comparatively weak. Carbons with special impregnations or cores now employed in carbon arc lamps emit additional radiation characteristic of the metal or chemical employed within the carbon. Carbons impregnated with iron, tungsten, titanium and nickel emit rich ultraviolet zones down to about 220 millimicrons; in addition, carbon arc sources emit much infra-red and red radiation. With great energy input, carbon arcs can emit a large quantity of radiation. For best efficiency, a definite relationship must exist between the diameter of the carbons and the amperage employed.

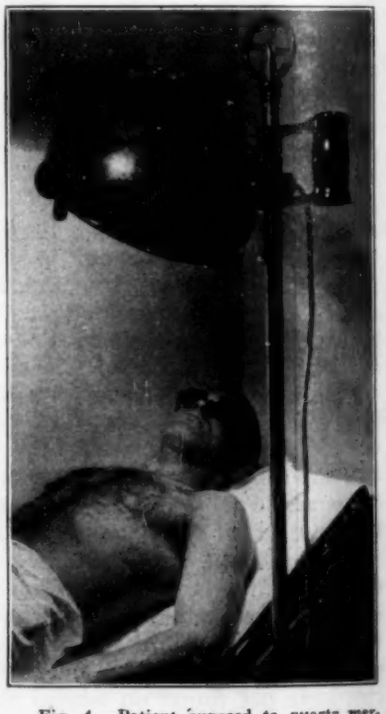

Fig. 4.—Patient exposed to quartz mercury vapor light.

The greater the amperage, the more heat is generated. A lower amperage arc can be operated nearer to the patient because its lessened heat makes this tolerable. So, by the law of inverse squares, close exposures increase the quantity of light utilized. As a result, lesser amperage arcs, such as 29 amperes, with specially impregnated carbons, may prove as effective on close irradiation of single patients as high amperage arcs necessarily operated at greater distance and generally employed for groups.

Other artificial sources of light are frequently employed, especially in the European clinics. These include the tungsten arc, iron and magnetite arcs, cadmium arc, oxyacetylene flames and osram lights.

Indications for the use of various sources of light therapy are still inexact, as are also the contraindications; but in many localities in cold and cloudy seasons

of the year, when sunlight is too uncertain and solar exposures are too interrupted, artificial sources of light have proved most valuable aids and substitutes.

PIGMENT

Mercury vapor arcs produce a yellowish-brown pigmentation. However, at times I have observed mercury vapor lights produce a pigment barely distinguishable from that produced by sunlight, but it does not last as long. Pigment produced by intense sources of heat, such as oxyacetylene blasts or osram lights, is said to simulate sunlight tan closely, and to be just as permanent (Kisch). The pigment from sunlight and the large Finsen arc is blackish-brown or red-brown; from long flame arcs and tungsten arcs red-brown.

That increased pigment production necessarily means an increased tendency to healing is not generally accepted. Similarly, however, the maintained production of an erythema is not a necessary accompaniment of improvement. Pigment can protect against an overdose of ultraviolet energy; it absorbs light, changing it to heat, and may allow for better heat radiation; it may possibly sensitize the skin to visible light as chlorophyl does the plant. Patients who failed to develop pigment have responded favorably to treatment just as patients who developed a strong pigment often failed to become healed. P. Keller showed that the development of ultraviolet pigmentation was independent of that of tolerance, and that ultraviolet tolerance is possible without pigmentation. Leonard Hill showed that melanin is not a sensitizer, but that a suspension of it can protect frog mesentery from ultraviolet rays.

DOSAGE

Curative results in light therapy may be brought about without the production of marked cutaneous burn, as only the first degree of redness need be produced. The skin offers a vast field of living cells, which are exposed to stimulation or injury in many ways, and such an effect may provoke immunizing or harmful effects. Ultraviolet rays from about 313 to 250 millimicrons produce skin erythema; about 69 per cent of light erythema is caused by rays from 302 to 297 millimicrons. Four per cent of this maximum is at 313 millimicrons; 16 per cent is at 253 millimicrons (Hausser and Vahle). Erythema is not caused by even one hour's exposure of the skin to ultraviolet rays longer than 330 millimicrons (Hill). Rays shorter than 250 millimicrons produce a very faint erythema. Dosage in therapy is therefore possibly largely dependent on the intensity of wavelengths from 313 to 250 millimicrons present. Erythema depends on the intensity and duration of exposure to the source of ultraviolet rays, the distance from the source, the temperature, and the individual sensitiveness of the skin

The dosage of light to be used therapeutically cannot be fixed. The sources of light and the individuals irradiated vary too greatly to allow of any generalization as to dosage. Even different areas of the body vary greatly in their sensitiveness to radiation. Some workers prefer an erythema, and others strongly stress the desirability of the production of a pigment. The Copenhagen school, employing particularly the carbon arc light, prefers erythema.

Eidenow and Hill aim at a mild erythema production with each dose applied. Thus, skin sensitiveness is maintained. This dose of light has regularly produced in their hands an increased bactericidal power of the blood, whereas excessive dosage has produced a marked decrease, and in animal experimentation has appeared to hasten death. They utilize, therefore, a great intensity of ultraviolet energy, and avoid overheating the body by using short and intense exposures. The degree of skin erythema regulates their dosage. Exfoliating skin is very opaque to ultraviolet rays, while newly exposed skin is very sensitive. The skin is rested during desquamation and several days elapse before further exposure to this area. When the skin becomes insensitive, say to large doses of mercury vapor quartz light, an exposure to long flame carbon arcs is employed. When pigment is established by this source, so that a long exposure is now required to produce redness, this exposure can be reduced by using nickel-cored or tungsten-cored carbons. Their method requires only fifteen minutes' maximum radiation in contrast to the Finsen method, with which a two hour exposure is the rule. The varying degrees of erythema are determined by a skin colorimeter. Rollier and his followers, on the other hand, aim for pigment production.

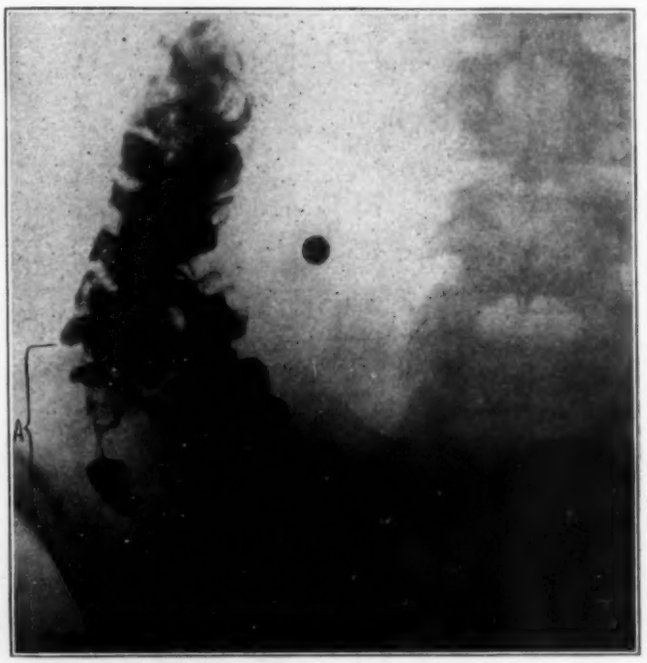

Fig. 5.—Filling defect (*A*) in cecum of intestinal tuberculosis before light treatment.

Overdosage of light may produce injury. Hill and Eidenow found that excessive exposure caused a drop in the bactericidal power of the blood with malaise and fatigue. During menstruation, the blood bactericidal power was lowered and radiation appeared to make this even worse. In experiments in which rabbits were given a septicemia, the bactericidal power of the blood fell to a very low degree and was not improved by radiation, thus supporting the view generally held that in the treatment of acute infections by light one should be very cautious. Very aged patients have been considered to have their resistance to infection lowered by the injudicious application of light. In tuberculosis, overdosage has produced focal reactions that have done harm; light may set up a focal reaction similar to that of tuberculin. Hobert [1] also found that in anemic rats careful irradiation leads to a rapid regeneration of erythrocytes and hemoglobin; but if the irradiation is too vigorous, blood cells are destroyed.

1. Hobert, H.: Klin. Wchnschr. **2**: 1213 (June 25) 1923.

The schedule for increasing the period of exposures with various sources of light must vary. The physician is to be guided chiefly by the signs and symptoms evinced by the patients in their response to treatment, in addition to the skin reactions. In tuberculosis, the selection of a form of light therapy may depend on the state of activity or on the form of the disease to be treated; thus, with a febrile advanced case, one might prefer to avoid the heat rays. One may also have to depend on the source of light available or be influenced by the season of the year. Furthermore, a failure in response to one form of light therapy may be an indication for the trial of another form, or possibly many forms of light therapy may have to be combined in various ways. I have found that some patients with sallow complexion showed little skin erythema on the first exposure to the mercury vapor quartz lamp, but if previously treated with from three to four doses of the carbon arc lamp they later reacted with erythema. There may exist contraindications to light therapy which are not yet clearly understood but which later with more experience may become evident.

It is highly probable that, in most forms of progressive acute tuberculosis, light therapy is not indicated. It is well known that roentgen-ray therapy is not indicated in such cases. In my experience, intestinal tuberculosis is an exception. In this complication at times, even when progressively active, mercury vapor quartz light has proved of great value.

With any form of tuberculosis, light is used merely as an adjuvant and should be combined with every other possible aid. The mainstays of treatment still exist in rest, good food and hygienic outdoor life.

Fig. 6.—Disappearance of filling defect (*A*) after eight months of quartz mercury arc light exposures.

With bone and joint tuberculosis, orthopedic treatment with immobilization and traction is absolutely essential while light exposure is being employed. Surgical intervention is occasionally needed, especially for the aspiration of abscesses or for hastening the expulsion of sequestrums. Joint resection and ankylosis are necessary much less often with heliotherapy, but there may even yet be certain social, economic and other factors that occasionally force this intervention. The plaster cast is less often needed. As pointed out earlier, one always combines general and local light exposures, regardless of the location of the lesion.

TECHNIC OF EXPOSURES

With sunlight the patients are graduated to increasing periods of exposures over increasingly large areas of the body, according to Rollier's technic. Sunlight of the lowlands and highlands is equally valuable, but the heat of the day should be avoided (fig. 2). Diffuse daylight and air exposures on cloudy days are used to great advantage. Chilling winds should be avoided. Overexposures may incite focal reactions to activity.

With plain carbon arcs, as used at the Finsen Institute, one begins with a fifteen minute irradiation, front and back, and then increases daily fifteen minutes front and back until exposures of two hours daily are reached. The lamps are placed at a distance from the patient, so that the heat emitted from this source of light is tolerable. Frequently, sweating occurs during the exposures. The treatment is then terminated with a sponge bath. General body exposures are always employed, and, if possible, an additional local exposure is made. In these cases as much skin surface as possible is irradiated. With impregnated carbons, depending on the cores and the amperage employed, one can gage the dosage by watching for skin erythema and the general constitutional reactions. With these one must feel one's way cautiously by first using very small exposures. With the 90 ampere Schwartz carbon arc, beginning exposures of one-half minute are made, and perhaps twenty minutes secures the maximum exposure. Although with the Finsen arcs of thick carbons exposures of two hours are made, fifteen minutes is the longest time with the long flame arcs used by Hill and Eidenow. The English workers have also been aiming to determine the exact amount of skin that must be exposed to produce the greatest rise of the bactericidal power of the blood, this being figured out in terms of square centimeters per kilogram of body weight. As a result, they have exposed only limited skin areas such as the thorax or back, and a new area every other day, utilizing four parts and returning to the area of the first exposure on the tenth day. The skin is thus maintained in a light-sensitive state, and no exposure is given during desquamation. The question of the advisability of such a manner of irradiation is not yet solved.

With a new mercury vapor quartz light, alternating current of 5 amperes, 110 volts, I have made exposures purely on an empiric basis, beginning with three minutes at a distance of 36 inches from the body, employing two exposures in front and two behind, and centering over the middle of the upper and lower halves of the body in order to expose uniformly as much of the skin surface as possible; a fifth exposure is then made directly over the area of disease to include any possible reflex depth action; a daily increase of one minute is added to the exposure until a twenty-minute period is reached

front and back at this distance on all five parts. The room temperature is maintained at about 70 F. Ventilation is employed, so that the patient senses the movement of air. Heat lights (carbon incandescent bulbs) are added, if the patient is not able to endure the ventilation without discomfort. With older burners, dosage is increased more rapidly.

The quartz burner is then slowly brought nearer to the body by lowering it about 1 inch every other day until it is 18 inches from the skin. After this, the second intensity is frequently employed, especially if the burner is one that has had considerable usage. In addition to the general body exposures with the air-cooled mercury vapor light, a contact exposure is often made to a superficial focus of tuberculosis by means of an applicator attached to the water-cooled mercury vapor light.

METHODS OF DOSAGE DETERMINATION

The light energy emitted by certain sources varies markedly in intensity from time to time. This is more particularly so with the mercury arc. There are certain tests that can determine this variation, and are aids for dosage:

1. The Bering-Meyers iodine method is based on the separation of free iodine from a solution of acidified potassium iodide by means of light. The iodine was determined colorimetrically by Hackradt with a colorimeter.
2. P. Keller modified Bering-Meyers' iodine solution by adding starch and varying quantities of sodium thiosulphate to the potassium iodide solution, and obtained a blue color on irradiation. This he biologically standardizes against skin redness.
3. The Eder-Hecht photometer was introduced by Freund, and is based on the sensitiveness of silver-photographic paper through a graded gelatin wedge.
4. The actinometer of Fürstinau, when exposed to light, responds with changes in the electrical conductivity of selenium.
5. Lithopone paste, advised by J. Clark, is a sensitive salt which on exposure to ultraviolet radiation is compared with a standard.
6. The bleaching of a standard solution of acetone-methylene blue, corresponding to the action of light on infusoria, is worked out by Hill, Eidenow and Webster. Hill[2] reported that the standard color tubes made up with methylene blue do not keep well, especially in warm weather. He recommends similar tubes made up with copper nitrate and potassium chromate.
7. Oxidation of oxalic acid (sensitized with uranylsulphate) by ultraviolet radiation is advised by Robinson and Anderson.[3]

Most of these methods react with the visible and long ultraviolet rays and are not specific in their reactions to the erythema-producing rays, which are those shorter than about 313 millimicrons.

CLINICAL RESULTS

Sunlight.—The most favorable response to solar exposures have been shown by the so-called pretuberculosis of children, and by tuberculosis of the lymph nodes (including hilum), the pleurae, bones and joints, peritoneum and intestines (fig. 3).

Less favorable results are usually obtained in pulmonary, genito-urinary, laryngeal, ocular, aural and cutaneous tuberculosis. With joint tuberculosis the fibrous form of ankylosis has been overcome and joint function has been often restored. With lymph node disease, massive tuberculous glands have been extruded from their capsules during healing by light. Fistulas are more resistant to treatment.

2. Hill, Leonard: Lancet **2**: 299 (Aug. 9) 1924.
3. The detailed technic of these tests is given by Mayer, E.: Clinical Application of Sunlight and Artificial Radiation, Baltimore, Williams & Wilkins Company, 1926.

Carbon Arc.—With plain or cored carbon arcs of high amperage (from 55 to 75 amperes) or with arcs of lower amperage (from 20 to 29 amperes), the best results have been reported with cutaneous, bone and joint, lymph node, laryngeal, peritoneal and ocular (corneal and phlyctenular) tuberculosis; less favorable have been the reports on progressive pulmonary, genito-urinary and intestinal tuberculosis.

Quartz Mercury Vapor Light.—In my own experience of ten years with the use of the quartz mercury vapor light as an adjuvant (fig. 4), the most favorable response has been encountered in intestinal tuberculosis. The diagnosis is established by a history of all varied digestive complaints, such as alternating constipation and diarrhea, nausea, vomiting, abdominal pain, soft or watery stools, or merely by persistent loss of weight or slight elevation of temperature otherwise unexplained—by any or all of these symptoms combined with roentgen-ray demonstration of spasm or filling defect in the cecum or ascending colon in a patient known to have pulmonary tuberculosis. Figures 5 and 6 show roentgenographically the intestine with a filling defect before treatment, and an almost complete disappearance of this defect after eight months of quartz mercury vapor exposures; this improvement was accompanied by a cessation of the digestive complaints. After the study of a large series of such cases, of which the foregoing is typical, I am convinced that this recovery is directly related to the light therapy.

Other forms of tuberculosis which in my experience are frequently responsive to mercury arc light exposures are the "hilum glandular" or so-called hidden tuberculosis of children and adults; the superficial forms of tuberculosis, such as the cutaneous, oral or pharyngeal, laryngeal (except the acute and the edematous forms), corneal and phlyctenular ocular tuberculosis, and the lymph node and peritoneal tuberculosis. Less favorable in their response but occasionally improved are genito-urinary, and bone and joint tuberculosis. Postoperative sinuses after nephrectomy were especially responsive.

Reliance on artificial sources of light as an important aid in pulmonary tuberculosis is not to be encouraged.

CONCLUSION

Light of any form by itself is not curative but comprises only one of the important adjuvants in the treatment of tuberculosis. To believe that sunlight or artificial sources of light will cure all forms of "surgical" tuberculosis; to be unduly optimistic about this treatment and to consider it a specific form of treatment; to use it without sound medical guidance and adequate equipment, and, finally, to employ it to the exclusion of rest and the hygienic-dietetic regimen, eliminating orthopedic measures or the occasional necessary surgical intervention in bone and joint tuberculosis, is bound eventually to dishearten many sufferers and to bring discredit on an otherwise eminently desirable method of treatment.

108 Main Street.

Health and Perspiration.—Exercise carried to the perspiring stage fulfils the chief physiologic function of bathing, which is to remove the waste material thrown off from the body. A man who perspires freely, though begrimed with surface dirt and redolent with sweaty odors, is much cleaner from the standpoint of health than the young lady who never perspires from her own activity, though her skin is as white and fair as perfumed soap may make it.—Sargent: The Biological Significance of Physical Education, *American Physical Education Review*, December, 1918, p. 525.

BENIGN TUMORS OF THE STOMACH FROM THE ROENTGENOLOGIC POINT OF VIEW *

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Three years ago I [1] reported roentgenologic observations in twenty-three cases of benign tumor of the stomach in which operation was performed at the Mayo Clinic. Since then eighteen additional cases have been observed here. It is my purpose to recapitulate the amplified series and review the subject. A survey of the literature has disclosed fifty-two cases recorded by others, and the aggregate thus affords a reasonably substantial basis for certain general deductions.

As compared with malignant new growths, benign tumors of the stomach are rare. Various compilations, derived from necropsy and surgical statistics, have been made to determine their incidence. Eusterman and Senty [2] have computed that only 1.3 per cent of all gastric tumors seen at operation are benign. However, this percentage does not represent their practical importance, for the diagnosis in a given instance may have an individual significance which cannot be measured by statistics.

Histologically, the benign tumors are of great variety. They include the myomas, adenomas, fibromas, papillomas, hemangiomas, lymphangiomas, myxomas, lipomas, chondromas, osteomas, mixed types, dermoid and miscellaneous cysts, and mucous polyps. Of these types, the mucous polyps, adenomas, papillomas, myomas, fibromas and hemangiomas are the most common; the others are extremely rare.

With few exceptions, benign tumors have certain traits in common. In general, their site of preference is the pyloric or middle third of the stomach. As a rule, they project into the gastric lumen, and are sometimes sessile but more often pedunculated. A small minority project outside the stomach, and these also are usually pedicled. Exceptionally they are large, but most of them are small, with the greatest dimension a few centimeters. In form they tend to be regularly ovoid with a fairly smooth contour, but are sometimes irregularly polygonal or multilobular. The intraventricular tumors are subject to ulceration, but this is usually superficial. Not infrequently they are concurrent with gastric ulcers or cancers; sometimes adenomas and mucous polyps are associated with intestinal polyps. Although at least primarily benign, almost all these growths are potentially malignant. Papillomas often become cancerous, adenomas are likely to take on malignant characteristics, myomas and fibromas sometimes have areas of sarcomatous degeneration, and even the simple mucous polyps are strongly suspected of affiliation with cancer. In case reports single growths predominate, but most varieties may be multiple, and mucous polyps, papillomas and adenomas are often numerously multiple.

Gastric polyposis is an indefinite term which has been applied to benign polypoid intraventricular growths of various kinds. In 1888 Menetrier [3] described two varieties, polyadenomes polypeux and polyadenomes en nappe, the former consisting of more or less detached polyps with independent pedicles, the latter of closely set tumors arising from a common thickened base and forming a plaque. While his designation is suggestive of true adenomas, his histologic description is that of mucous polyps or hypertrophied rugae, both of which consist essentially of a mucosal overgrowth, the glands especially being increased. Menetrier included in his reports cases of single mucous polyps, plural but not numerous polyps, and multiple diffuse polyps. Other writers have followed him in this respect, and some of them have apparently included true adenomas and papillomas, these terms occasionally being used synonymously with polyposis. It seems obvious that the true adenomas and papillomas should be excluded. Further, notwithstanding the precedent set by Menetrier, it might be well to restrict the term polyposis to numerously multiple mucous polyps and hypertrophic rugae.

SYMPTOMS

The symptoms of benign gastric tumors depend on their size, number, situation, presence or absence of ulceration, and whether they exist concurrently with cancer or ulcer. Exogastric tumors, even when large, seldom produce symptoms referable to the stomach. Endogastric tumors, if single or few in number, small, not eroded, not near enough to the pylorus to block it, and not accompanied by other gastric lesions, may not produce symptoms; many such cases have been found at necropsy or in the course of operation for other disease. In the event of a coexisting ulcer or cancer, the symptoms of the latter diseases are usually dominant. Large tumors, tumors which are extensively or deeply eroded, and those which obstruct the pylorus, give rise variously to distress, related or unrelated to food, and to weakness, vomiting, hematemesis and melena. Often free hydrochloric acid is not found in the gastric contents, and there may be complete anacidity. Mucus is likely to be increased. The tumor is seldom palpable. Continuous loss of blood frequently results in profound secondary anemia, and this may be the sole definite sign. On the whole, the symptoms and signs, even when pronounced, are suggestive of cancer or ulcer, and one or the other is usually the clinical diagnosis. In two or three of the cases reported tissue was recovered from the gastric contents and a microscopic examination made the diagnosis possible. Examination with the gastroscope was of some assistance in one case. However, the simplest and most efficient aid in the diagnosis is the roentgen ray.

ROENTGENOLOGIC DATA

The fifty-two cases in which the roentgenologic data are reported in the literature comprise five of exogastric tumor, and forty-seven of endogastric. The exogastric growths were all single myomas or fibromas. Four of these produced more or less deformity of the gastric shadow, but the roentgenologic diagnosis was ulcer or cancer. In the fifth case, a large myoma attached by a pedicle to the anterior gastric wall did not cause visible deformity. Cases of single endogastric tumor numbered twenty-seven, and included fibromas, adenomas, myomas, papillomas, mucous polyps and mixed tumors. Among the other cases of endogastric tumor were three of multiple mucous polyps, two of multiple papillomas, and one of hypertrophied rugae prolapsing into the pylorus. Nine cases were classic examples of diffuse gastric polyposis. A roentgenologic diagnosis of benign tumor was made in a few cases, chiefly those seen in

* From the Section on Roentgenology, Mayo Clinic.
* Read before the Section on Radiology at the Seventy-Eighth Annual Session of the American Medical Association, Washington, D. C., May 18, 1927.

1. Moore, A. B.: A Roentgenologic Study of Benign Tumors of the Stomach, Am. J. Roentgenol. **11**: 61-66 (Jan.) 1924.
2. Eusterman, G. B., and Senty, E. G.: Benign Tumors of the Stomach, Surg. Gynec. Obst. **34**: 5-15 (Jan.) 1922.
3. Menetrier, P.: Des polyadénomes gastriques et de leurs rapports avec le cancer de l'estomac, Arch. de physiol. norm. et path. **1**: 32-55, 236-262, 1888.

recent years; in some only a concurrent cancer or ulcer was discovered, and in many the roentgenologic appearance was described without an attempt at diagnosis. Most of the descriptions and illustrations are now recognized as suggestive of benign tumor. Although the number of correct diagnoses seems small, it must be remembered that the cases were scattered, few observers having seen more than one or two.

The cases observed at the Mayo Clinic now number forty-one. There were two cases of single extraventricular tumor, one a dermoid cyst, the other a fibroma. Among the thirty-nine cases of intraventricular tumor the growths were single in twenty-seven; five were hemangiomas, five fibromyomas, five adenomas, two fibromas, two adenomyomas, two myxofibromas, three mucous polyps, and two papillomas. The twelve cases of multiple tumors comprised two of adenoma, three of mucous polyps, one of adenomyxoma, one of myoma, one of localized hypertrophied rugae, and four of diffuse polyposis.

In the earlier cases of this series the examiners were not familiar with any of the roentgenologic manifestations indicative of benign tumors. However, since our review in 1924 of the roentgenologic characteristics of such tumors and the application of these signs, the diagnosis has become almost consistently accurate; only one case has been found at operation which was not previously discovered with the roentgen ray.

On reviewing these two groups which consist of ninety-two cases one notes, first, that exogastric benign tumors usually, either by pressure or by traction, produce deformity of the gastric shadow which is likely to be misinterpreted as indicating cancer or ulcer, although exceptionally the fact that the lesion is extraventricular can be determined; secondly, that endogastric benign tumors have rather striking roentgenologic features which should make their diagnosis possible in a high percentage of cases.

ROENTGENOLOGIC SIGNS OF ENDOGASTRIC BENIGN TUMORS

Most conspicuous among the signs of endogastric benign tumors is the filling defect, which is generally central rather than marginal, although it may be near the curvature, is smoothly and sharply contoured, as a rule, and is commonly rounded or oval. The regularity of outline is due to the smooth contour of the tumor and to the fact that ulceration, if present, is usually shallow. Occasionally a large tumor will show minor irregularities, and a compound lobulated tumor will produce a lobulated shadow, but the individual lobules are evenly rounded. It should be emphasized here that in most cases approximation of the gastric walls by manual pressure during the screen examination is necessary to bring out fully the contours of these tumors. Without this manipulation, small growths are likely to elude the examiner.

The outline of the gastric shadow is commonly preserved in the region of the internal defect, although it may be faint or made up of short broken lines. This is especially true of pedunculated growths, and the majority of benign tumors are pedunculated. Mural and broadly sessile tumors, or numerous thickly set polyps may, of course, exclude the barium from their base and produce a marginal defect. Sometimes it is possible to trace the pedicle to its point of attachment; however, this is unusual. If the pedicle is long, the tumor can be shifted within the stomach by palpation.

An almost unvarying characteristic of benign tumors, regardless of size or number, is that they do not lessen the size of the stomach, as indicated by its outline. They intrude into the lumen and may thus diminish capacity, but they do not cause contraction or spasm and thus there is no general shrinking effect. Absence of the spasm common to ulcer and cancer is one of the earmarks of benign tumors.

Since the majority of the tumors arise from the mucosa, the gastric musculature remains unaffected, the wall continues to be pliant, and peristalsis is likely to be uninterrupted.

Because the tumor is usually small as compared with cancer, a mass can seldom be palpated during examination.

The rugae surrounding the tumors, except in cases of polyposis, commonly have a normal appearance; they are not obliterated as in cancer, or thrown into convergent folds as in ulcer.

Multiplicity of the growths, as evidenced by multiple internal filling defects, is strongly indicative of benignity. In classic examples of diffuse polyposis the gastric shadow has the appearance of a coarse sponge, because of the numerous oval or rounded translucences. The stomach is of normal size, the line of the curvatures is usually traceable, although it may be serrated, and peristalsis may run its ordinary course. As a whole, the picture is striking and distinctive.

Although benign tumors most often have pronounced characteristics, their diagnosis is not always easy. The most difficult cases, perhaps, are those in which the growths are confined to the antrum and obstruct the pylorus. In this event there may not be any definite roentgenologic signs save a residue from the six-hour meal and a vague filling defect in the antrum, so that the examiner can only affirm the presence of a lesion without specifying its nature. If, however, a polypoid tumor prolapses into the duodenal bulb it will produce a central translucence in the bulbar shadow which is fairly diagnostic. When typical cancer coexists with benign tumor the examiner is likely to discover only the former, naturally attributing all the anomalies of the gastric shadow to the malignant lesion.

SUMMARY

A benign gastric tumor usually produces a filling defect which is centrally situated and clearly circumscribed; it does not distort the rugae, interfere with peristalsis, or obstruct the pylorus unless seated in the antrum; it does not cause contraction or spasm of the stomach. It must be conceded that while these signs are reasonably diagnostic, they are not absolutely pathognomonic of benignancy, for pedunculated growths may be primarily or secondarily malignant. In view of the increase and diffusion of roentgenologic experience and the rather emphatic traits of benign tumors, it is probable that their diagnosis will be made more often and more confidently in the future than it has been in the past.

ABSTRACT OF DISCUSSION

DR. GEORGE W. HOLMES, Boston: Since 1912, we have had seven proved cases of benign tumor of the stomach occurring in about 30,000 gastro-intestinal examinations. In six of these cases roentgen-ray examination was made which resulted in a correct diagnosis in three. In all cases a definite lesion of the stomach was demonstrated. Peristalsis was present over the site of the lesion in all but two. We believe that this sign when present is of the greatest value. In the one case in which it was found and interpreted incorrectly, the exami-

nation was made in 1913; this was the first case of benign gastric tumor in our clinic in which a complete roentgen-ray study was carried out. Most of our patients showed an anemia, in two of such severe grade that a primary disease of the blood was thought to be present until the roentgen-ray examination was made. The point of greatest importance in this disease, it seems to me, is its differentiation from inoperable malignant tumor. Benign tumors are usually curable by surgical means.

DR. H. K. PANCOAST, Philadelphia: Two conditions at the pyloric region of the stomach may produce definite obstructive symptoms and also slight bleeding and a progressive anemia. One is papilloma, which tends to become more or less pedunculated, and the other is a hypertrophied mucosa. Both may produce a ball valve type of obstruction and both may bleed. We have diagnosed more than twenty cases of the kind, and in many of them there was found evidence of prolapse through the pylorus into the duodenum, with filling defects in both localities. Fifteen patients were operated on; six had pernicious anemia. Of these six, five had papillomas and one, hypertrophied mucosa. Two of the papillomas were found to be malignant, which indicates that all such patients should be operated on for this reason, and also to relieve symptoms and possible bleeding. An operation will not cure pernicious anemia, but it will stop bleeding and avoid subsequent malignant degeneration. The filling defects may not be shown in the erect posture but will be brought out in the prone position. Herniation may occur only in the right oblique position.

DR. F. B. STEPHENSON, Denver: In the past year I had as a patient a physician of very heavy build who had lost only 8 or 9 pounds in a year and complained chiefly of being tired. He fell into the hands of a good internist who found him anemic, but could not determine a special cause for the anemia. He referred the patient to me. At first I found nothing at all definite by fluoroscopy but on manipulating and making the least little pressure, I was able to produce what appeared to be a filling defect in the central portion of the stomach. Placing him on the horizontal table, I found a position in which the same defect showed, making enough pressure in a certain way to bring it out, and we caught it on a plate. I diagnosed tumor of the stomach, probably benign and probably on the posterior wall. His two sons were physicians, and as one was well known in Chicago, he went there and was examined thoroughly. His condition was pronounced pernicious anemia and little importance was placed on the stomach condition we had found, although I think the same thing was then observed. For three months he was given a liver extract and liver diet without any improvement, though he lost little weight. Three or four months later we repeated the examination and found a marked deformity. He was operated on for the tumor, which was about the size of a duck's egg, pedunculated, and attached to the posterior wall of the stomach. It was removed and the pedicle was cauterized. Since that time—now about three months—the patient has maintained his weight and has been able to get back to his work; the blood picture has improved materially. I think he has now about 70 per cent hemoglobin. The interior of the tumor was pronounced cancerous and the other portion not, so I think that if the patient had been operated on at an earlier stage he would have had a better chance of attaining a normal condition of the blood.

DR. ALEXANDER B. MOORE, Rochester, Minn.: There is little to add, except to emphasize further the points that have been made in this discussion. These cases are interesting to me because, first, benign tumors usually have a characteristic roentgenologic appearance; secondly, they are found usually in persons who are manifestly ill, and thirdly, their surgical treatment is very satisfactory. While none of our patients have had a typical pernicious anemia, the secondary anemia has been so marked as to simulate a pernicious type. Few of those patients had noticed blood in the stools, and profuse hemorrhages were extremely rare. It should be stressed that a benign tumor is usually operable in a location where it would be impossible to resect a malignant one.

PURPURA HEMORRHAGICA (ESSENTIAL THROMBOCYTOPENIA)

TREATMENT BY THE MERCURY VAPOR LAMP*

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In a preliminary communication Sooy and Moise[1] reported a new and more rational method of treatment of idiopathic purpura hemorrhagica (essential thrombocytopenia). The rationale of their measure was based on the knowledge that increments in platelets were observed in rats exposed to mercury quartz lamp irradiations and to sunlight.[2] Hence, transmuting this fact into the suggestion that irradiation by the mercury vapor lamp might be beneficial in essential thrombocytopenia, since one of the characteristics of that malady is a lowered platelet content of the blood, they subjected ten patients to this type of treatment and have reported satisfactory results. They cite one case in detail, in which a marked improvement was effected after ten exposures varying in length from four to twelve minutes. The result was judged by clinical as well as laboratory observations; that is, the platelet count rose, the bleeding time decreased, and the epistaxis, as well as the hemorrhages into the skin, stopped.

Stimulated by this report, and having a case of chronic essential thrombocytopenia in one of the wards at the time the report was published, I thought it desirable to utilize this simple therapeutic measure. My enthusiasm was somewhat dampened when the fact was called to my attention that prolonged and frequent exposure to ultraviolet rays might do more harm than good.[3] However, through the courtesy of the pediatric service, I was given the opportunity to test this method. Two other cases of chronic essential thrombocytopenia in adults were treated by this method, and the results of the three cases studied are given here.

METHODS

A standard mercury quartz lamp was used, and the exact procedure is described in the report of cases. All the patients showed the skin effects of the treatment, but none complained of any disagreeable features.

The platelets were counted by a method in use at the hospital.[4] The diluting fluid consists of a freshly prepared, approximately 3 per cent sodium citrate solution (1 Gm. in 30 cc. of distilled water). The erythrocytometer is used for the dilutions, and the counts are made in an ordinary blood counting chamber. The determinations were checked in every case by another observer, and at times by two different persons. In addition, smears were made, and the platelets were estimated in this way against the red cells after being stained with Wright's stain. The bleeding time was determined by the method of Duke.

REPORT OF CASES

CASE 1.—A boy, aged 11, was admitted, July 9, 1926, for the second time, the first admission having been in 1920, because of nosebleed following trauma and of "black and blue"

* From the Medical Department of Mount Sinai Hospital.

1. Sooy, J. W., and Moise, T. S.: Treatment of Idiopathic Purpura Hemorrhagica, J. A. M. A. **87**: 94 (July) 1926.
2. Cramer, W., and Drew, A. H.: Effect of Light on the Organism, Brit. J. Exper. Path. **4**: 271 (Oct.) 1923. Laurens, H., and Sooy, J. W.: The Effect of Light and Darkness on Blood Cell Number of the Growing Albino Rat, Proc. Soc. Exper. Biol. & Med. **22**: 114, 1924.
3. Levy, M.: Der Einfluss ultravioletter Strahlen auf die inneren Organen der Maus, Strahlentherapie **9**: 618, 1919. Hausman: Grundzuge der Lichtbiologie und Lichtpathologie, quoted by Cramer and Drew.
4. Ottenberg, Reuben; and Rosenthal, Nathan: A New and Simple Method for Counting Blood Platelets, J. A. M. A. **69**: 999 (Sept. 23) 1917.

spots all over his body. The most interesting note on the first record was of a tonsillectomy performed a year before without any postoperative hemorrhage. The physical examination at that time showed no abnormalities, except for numerous subcutaneous hemorrhages over both the upper and lower extremities. The platelet count was 50,000, and the bleeding time four and one-half minutes. He remained in the hospital for seven weeks and was discharged improved. From the time of his discharge until April, 1926, he was perfectly well and free from all symptoms. At that time he again fell and noticed many black and blue spots over his body, as well as bleeding from the nose. He visited the outpatient department, where he was observed for a short period and advised to enter the hospital. The physical examination on admission failed to reveal much that was abnormal. Purpuric areas and ecchymoses were the outstanding conditions. The red cells numbered 4,960,000; the white blood cells 10,600, with a normal differential count; the platelets, 80,000; the bleeding time was seven minutes with a positive tourniquet test in three minutes. Before this patient was treated, the platelet count was followed

TABLE 1.—*Results of Exposures to Ultraviolet Rays in Case 1*

Date	Time of Exposure in Minutes	Platelets	Comment
7/27/26	3	80,000	Front and back exposed at a distance of 18 inches
7/28/26	4	100,000	
7/29/26	5	120,000	
7/30/26	6	100,000	Hemoglobin, 62%; red blood cells, 6,500,000
7/31/26	7	300,000	Hemoglobin, 63%; red blood cells, 5,500,000
8/ 1/26	8	300,000	
8/ 2/26	9	250,000	
8/ 3/26	10	200,000	
8/ 4/26	11	200,000	
8/ 5/26	12	200,000	
8/ 6/26	13	150,000	
8/ 7/26	14	120,000	
8/ 8/26	15	100,000	Bleeding time, 12 minutes
8/ 9/26	..	100,000	

by Dr. Buchman for about two weeks. The lowest count was 80,000; the highest, 135,000. Most of the counts were 100,000. After this control period, the boy was exposed to the ultraviolet rays; the results are given in table 1.

It is apparent that there was a transient increase of the platelets. The bleeding time, however, became prolonged; and four days after the treatments were discontinued, large diffuse ecchymoses appeared on both lower extremities and the platelet count fell to 50,000. It was thought that the exposures were

TABLE 2.—*Results of Second Exposures in Case 1*

Date	Time of Exposure in Minutes	Platelets	Comment
8/25/26	..	60,000	Front and back exposed at a distance of 13 inches
8/26/26	6	55,000	
8/27/26	9	50,000	
8/28/26	12	50,000	
8/29/26	15	50,000	
8/30/26	18	60,000	
8/31/26	28	85,000	
9/ 1/26	28	.....	Bleeding time, 12 minutes. A positive tourniquet test after 1½ minutes
9/ 2/26	28		

perhaps too gradually increased and at too great a distance; therefore, after a two weeks' rest, the treatments were resumed. The counts were 60,000 and 55,000 on two consecutive days before the exposures, which were given at a distance of 13 inches.

The subcutaneous hemorrhages continued in spite of the treatments, and five days after the treatment was discontinued the platelets were 35,000; the hemoglobin, 63 per cent, and the red blood cells, 4,500,000.

CASE 2.—A woman, aged 31, admitted for bleeding gums, tongue and mouth, had noticed blistering of the tongue and mucous membranes of the mouth three days before admission. These blisters broke, and she spit a mouthful of blood. She visited the outpatient department where, in addition to the foregoing signs, purpuric spots were found over her body, and she was referred to the hospital. From her past history it was learned that she bruised easily and that purpuric spots appeared at the slightest trauma. The physical examination revealed hemorrhages in the right palpebral conjunctiva and in the mouth also. Petechiae, as well as ecchymoses, were present on her body.

The hemoglobin was 70 per cent; the white blood cells, 9,600, with a normal differential count. The platelets numbered 20,000. The bleeding time was thirty minutes, and clot retraction was slight after four hours.

TABLE 3.—*Ulraviolet Ray Exposure in Case 2*

Date	Time of Exposure in Minutes	Platelets	Comment
10/21/26	3	35,000	Bleeding time, 10½ minutes; front and back exposed at a distance of 18 inches
10/22/26	6	.....	
10/23/26	9	40,000	
10/24/26	12	50,000	
10/25/26	15	.....	Bleeding time, 45 minutes; menstruating
10/26/26	18	38,000	
10/27/26	28	45,000	Bleeding time, 9 minutes

CASE 3.—A woman, aged 24, had had a tendency to bleed since childhood. The bleeding from the gums and into the skin would occur on and off. The slightest injury produced ecchymoses, and about eight years before admission, her condition was severe enough to require a transfusion. During the past two months the bleeding from the gums and into the skin had become considerably worse, and she decided to enter the hospital. On admission she also complained of dizziness, weakness and nausea. The patient was well developed and well nourished, but pale; she had numerous petechiae and ecchymoses and bled from the gums. The hemoglobin was 25 per cent; the red blood cells, 1,600,000; the white blood cells, 8,200, with a normal differential count. The platelet count was 60,000, the bleeding time, fourteen plus minutes; clot retraction was slight after four hours.

TABLE 4.—*Effects of Ultraviolet Ray Exposure in Case 3*

Date	Time of Exposure in Minutes	Platelets	Comment
2/10/27	6	50,000	..
2/11/27	9	.....	
2/12/27	..	.....	
2/13/27	..	80,000	Hemoglobin, 38%; red blood cells, 3,200,000
2/14/27	12	.....	
2/15/27	15	.....	
2/16/27	18	120,000	Hemoglobin, 40%; bleeding time, 21 minutes
2/17/27	..	.....	
2/18/27	25	.....	
2/19/27	28	.....	
2/21/27	..	40,000	Red blood cells, 3,200,000
2/23/27	..	50,000	

It can be seen in table 4 that four days after admission, and after only two periods of exposure, the hemoglobin and the red cell count doubled. The platelet count, however, hardly changed, and it is likely that the patient was on the road to a recovery stage. If the irradiations were really responsible for this improvement in the blood picture, one would expect more favorable results after the subsequent treatments. That did not occur in this instance. The bleeding time did not decrease, nor did the platelets show any change.

COMMENT

Since chronic essential thrombocytopenia is a condition from which recovery, at times, occurs without any treatment, it is obvious that the evaluation of any new

therapeutic measure is exceedingly difficult, and before such a measure is accepted, it must conclusively demonstrate that it alone has produced the result. There are cases on record in which the patients have been symptom free for years, only to have a recurrence at a later period. Wagner [5] cites the case of a child in whom fresh hemorrhages and ecchymoses appeared every three or four days, during a period of three years. There were also hematemesis and melena. The patient entirely recovered. Another case was observed by Osler [5] in which the patient had purpura for thirty-six years. Foerster [6] tells of two persons who were symptom free for seventeen and twenty-seven years, respectively, after an attack of purpura. In case 1, the boy enjoyed good health for about five years after the first attack, only to have a recurrence at the end of that period.

Because of the knowledge that patients often recover spontaneously, the treatment in the mild cases has been expectant and hygienic, while in the more severe ones transfusion has been the choice method of therapy. It was observed, however, that though many persons recovered, a group failed to improve, and deaths occurred in spite of repeated transfusions. Since better means for treating this condition were not available, transfusion was most frequently employed until Kaznelson [7] introduced splenectomy as a cure for essential thrombocytopenia. That this method of treatment is effective is shown by the report of Leschke and Wittkower,[8] who collected reports from the literature of fifty-seven patients treated by this operation. Of the persons so treated, two did not show improvement, nine died and the remainder improved and did well. This result is very promising, since in most cases splenectomy was resorted to as a life saving measure after all other methods of treatment failed. The hemorrhagic tendency decreased after the operation, in spite of the fact that the platelet count was subnormal after a transient postoperative rise.

Other methods of treatment have been used. Nagy,[9] believing that in females this condition is due to some ovarian dysfunction, reports that two cases, in which the ovaries were treated by roentgen rays, showed an elevation of platelets, as well as clinical improvement. Goia [10] states that he obtained excellent results by roentgen-ray irradiation of the spleen. In his case the improvement was only clinical without a concomitant increase in the number of platelets. Sooy and Moise state that by their method of therapy, namely, exposure to the mercury vapor lamp, the improvement was noted from the clinical and the hematologic standpoint. Thus, there are many cures for essential thrombocytopenia, all of which are claimed to be successful. This per se is not undesirable; but, in a disease in which recovery is often spontaneous, the efficacy of too many procedures producing a cure is to be questioned. For, to qualify as a cure and to earn recognition, the measure affecting the disease must, in most cases, produce the same final result under similar conditions, and while this statement is true for cases so treated by splenectomy, it fails to hold when applied to other therapeutic measures used in chronic essential thrombocytopenia.

I have treated three cases by the mercury vapor lamp. The cases so treated were of the chronic variety. In none of the cases have I noted an improvement, and while I do not wish to generalize regarding this method of treatment, it can be emphatically stated that in my hands at least, the method failed to produce the results claimed for it.

2 East Ninety-Fourth Street.

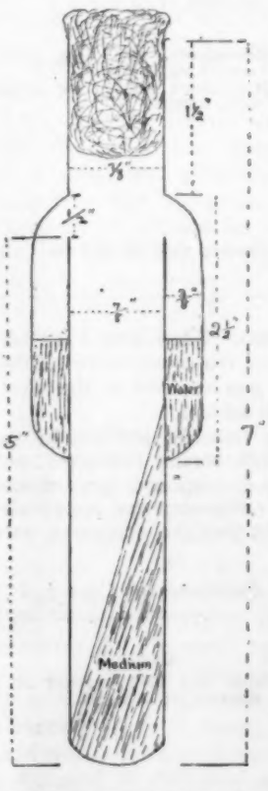
5. Osler's Modern Medicine **4**: 712-713, 1908.
6. Foerster, A.: Ueber Morbus maculosus Werlhofii, Ztschr. f. klin. Med. **92**: 170 (Nov.) 1921.
7. Kaznelson, P.: Verschwinden der hämorrhagischen Diathese bei einem Falle von essentieller Thrombopenie (Frank), nach Milzextirpation, Splenogene thrombolytische Purpura, Wien. klin. Wchnschr. **29**: 1451, 1916.
8. Leschke, E., and Wittkower, E.: Die Werlhofsche Blutfleckenkrankheit, Ztschr. f. klin. Med. **102**: 649 (Feb.) 1925.
9. Nagy, G.: Kastrationsversuche mit Ovarialbestrahlungen beim chronischen Werlhof, Ztschr. f. klin. Med. **102**: 284 (Nov.) 1925.
10. Goia, I.: Un cas d'hémogenie amélioré par la radiothérapie, Bull. et mém. Soc. méd. d. hôp. de Paris **50**: 555 (April) 1926.

Clinical Notes, Suggestions and New Instruments

A MOISTURE-RETAINING TEST TUBE*

W. W. BACON, M.S., BOULDER, COLO.

As a result of the dryness of the air in the southwestern Rocky Mountain section of the country, solid bateriologic mediums tend to dry out very rapidly, necessitating frequent transplantations to fresh, moist mediums. This drying out is an especial handicap in the case of cultures of slow growing micro-organisms, such as the tubercle bacillus, which must be incubated for long periods. Agar slant cultures of tubercle bacilli in standard test tubes frequently dry out before there is any appreciable growth.



Moisture-retaining test tube.

In an attempt to overcome this difficulty, the moisture-retaining test tube illustrated in the diagram was devised. The test tube can be made by fusing an outer pyrex cylinder, 2½ by 1⅝ inches, on an inner upper pyrex cylinder 1½ by ⅞ inches, and on an inner, lower pyrex cylinder of the same diameter, 5 inches long and sealed at the bottom. A less compact tube can be made by fusing a water jacket on a common 7 inch test tube.

One of these test tubes, containing an agar slant, was inoculated with tubercle bacilli, March 16, 1926, and incubated for two months. An abundant growth developed. The moisture-retaining tube containing this culture was then put in the ice chest for about five and a half months. At the end of this time, Aug. 26, 1926, a transplant was made, and the tubercle bacilli were shown to be alive. At the time of writing, Nov. 13, 1926, the same culture, now 8 months old, is in the laboratory, and the medium does not show any appreciable drying out.

Sterile water was added to the water jacket three times in eight months, to replace loss by evaporation. Ten other tubes like the one described, have been used, and found satisfactory.

The tube has the following advantages over sealing by paraffin, rubber dam, corks and other such devices: The moisture is retained for a longer time, it is easier to get into the tube, and the free passage of air, which is prevented by the methods of sealing mentioned, is permitted.

* From the Henry S. Denison Laboratory of Biological Research, University of Colorado.

SUBSTERILIZING INTRA-UTERINE RADIUM EXPOSURES: REPORT OF TWENTY-FIVE TREATMENTS

DOUGLAS P. MURPHY, M.D., RUTHERFORDTON, N. C.

Intra-uterine radium radiation is practically a specific for benign menopausal hemorrhage. A permanent sterility follows the usual exposures employed. The use of short exposures is not so well or generally understood and is feared because of possible sterilizing effects.

At the Rutherford Hospital between July 1, 1922, and Dec. 31, 1925, thirty-eight women in the child-bearing age received varying sized intra-uterine radium exposures all less than 1,000 millicurie hours each. One year following the last treatment, questionnaires were sent out and answers were received from twenty-five patients, or sufficient data were secured to make their records of value for this study. The accompanying table outlines the data received, which may be thus summarized:

The age range of these patients was from 17 to 42 years, with an average of 28 years. All were white but two. Nineteen were married. Seventeen complained of metrorrhagia, seven of menorrhagia, while three of the latter suffered from severe dysmenorrhea.

*Substerilizing Intra-Uterine Radium Exposures**

Number	Age	Color	Married	Metrorrhagia	Menorrhagia	Dysmenorrhea	Millicurie Hours	Months Observed	Amenorrhea in Months	Hot Flashes	Periodicity Improved	Periods Shortened	Subsequent Pregnancies	General Benefit	Additional Data
1	31	W	+	+	—	—	500	12	2	+	+	+	—	+	
2	34	B	—	+	—	—	500	18	1	+	+	+	—	+	
3	29	W	+	—	+	—	740	18	4	—	+	+	—	+	
4	39	W	+	+	—	—	862	27	2	+	—	+	—	+	
5	35	W	+	+	—	—	600	22	3	+	+	+	—	+	
6	28	W	+	+	—	—	600	36		+	+	+	—	+	
7	35	W	+	—	+	—	400	26	—	—	—	—	—	—	Complete failure
8	27	W	+	—	+	—	468	19	—	+	—	+	Twins	+	One living and healthy, one dead after birth
9	26	B	+	+	—	—	540	16	3	+	—	—	—	+	
10	25	W	+	+	—	—	500	16	2	—	+	+	—	+	
11	30	W	+	+	—	—	600	34	9	+	—	+	—	+	
12	24	W	—	+	—	—	450	34	2	+	+	+	—	+	
13	24	W	+	—	+	+	500	39	..	..	..	..	—	—	Followed by hysterectomy
14	20	W	+	+	—	—	800	18	..	..	+	..	+	+	Obstetric death nine months later
15	23	W	—	—	+	+	400	34	—	+	+	+	—	+	
16	24	W	—	+	—	—	500	48	—	+	+	+	—	+	
17	42	W	+	—	+	—	600	2	..	..	..	..	—	—	Death two months later from pellagra
18	24	W	+	—	+	+	250	27	—	+	—	—	—	—	Complete failure
19	23	W	+	—	—	—	500	28	1	—	+	+	—	+	
20	34	W	+	+	—	—	500	29	12	—	+	+	+	+	Living healthy child
21	26	W	—	+	—	—	250	27	—	—	+	+	—	+	
22	28	W	+	+	—	—	500	12	1	—	+	+	—	+	
23	30	W	+	+	—	—	500	18	12	+	—	+	—	+	
24	17	W	—	+	—	—	600	40	—	+	+	+	—	+	
25	32	W	+	+	—	—	500	36	34	+	—	—	—	—	Permanent sterility; complete failure

* Yes is indicated by plus; no, by minus.

Radon was used. The filtration consisted of 0.5 mm. of silver, 1.5 mm. of brass and 2 mm. of rubber. The exposures varied from 250 to 862 millicurie hours each, with an average of 526 millicurie hours.

Amenorrhea and hot flashes were frequent but inconstant sequelae and seemed to bear no direct relationship to the degree of exposure. Of twenty-two answers received, fifteen reported greater regularity of their periods and eighteen noticed a definite shortening of each menstrual flow.

Three patients subsequently became pregnant. All went to term. One had twins, of which one small one died at birth and the other is living and well. One mother has a living healthy child. The third mother died following a prolonged labor and cesarean section. Her child, normal anatomically in every way, died shortly after birth apparently from the severity of the labor.

Of the twenty-five patients treated, one died of pellagra several months after treatment and four others must be classed as unsatisfactory. Sterility resulted in one instance (patient 25). The dose was not excessive and no satisfactory cause can be presented to explain its occurrence.

It may be stated that small exposures of intra-uterine radium shorten prolonged periods and tend to make them more regular. Future pregnancy can be expected without detriment to mother or child. The treatments are not without danger, but this is relatively slight.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

ERYSIPELAS STREPTOCOCCUS ANTITOXIN (See New and Nonofficial Remedies, 1927, p. 337).

Lederle Antitoxin Laboratories, New York.

Erysipelas Streptococcus Antitoxin (Lederle) Unconcentrated. — This antitoxin is prepared by immunizing horses by subcutaneous injections of the toxic filtrate obtained from broth cultures of the erysipelas streptococcus, or by intravenous injection of cultures of the erysipelas streptococcus obtained from typical cases of erysipelas. When test bleedings show the serum to have reached a sufficient degree of potency, the blood is drawn under aseptic conditions, the serum is separated, clarified by Buchner filtration, sterilized by Berkefeld filtration and tested until the desired potency is obtained, this being determined by making serial dilutions of the serum with equal volumes of a dilution of erysipelas toxin of such strength that 0.1 cc. of the toxin-antitoxin will contain one skin test dose of the toxin. Erysipelas streptococcus antitoxin (Lederle) unconcentrated is administered in early cases of moderate severity in dosage of 12 cc. intramuscularly; in severely toxic and late cases, 36 cc. to 48 cc. intramuscularly, or 24 cc. to 36 cc. intravenously. Marketed in packages of one syringe, containing 12 cc.

Internal Changes in the Strong Emotions.—If a cat which has been fed a meal of gruel containing bismuth, a substance opaque to x-rays, is placed before the screen of a fluoroscope, the normal rhythmic, churning movements of the stomach can be clearly observed. If the cat is angered by a barking dog, these movements (of peristalsis, so called) may be greatly diminished; in fact, they often cease altogether. Even in milder vexation, such as that produced by tying a small stick to the cat's leg, the stomach movements may be inhibited. The glandular activities of digestion are similarly diminished or stopped; the flow of saliva may stop, producing the dry mouth characteristic of fear, rage or nervousness. The secretion of gastric juice is similarly diminished. In a typical experiment on an angered dog, instead of the usual 65 or 70 cubic centimeters of gastric juice, less than 9 cubic centimeters (and this of poor quality) were secreted. Thus the whole digestive process is side-tracked.—Gates: Psychology for Students of Education, p. 162.

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SATURDAY, JULY 30, 1927

CULTURES OF LACTIC ACID PRODUCING ORGANISMS

The extreme views originally formulated by the French microbiologist Metchnikoff with regard to the beneficent rôle of lactic acid producing bacteria in the alimentary canal are no longer seriously considered. Furthermore, there is general agreement among critical bacteriologists that *Bacillus bulgaricus,* to which Metchnikoff attributed the unique efficacy of prolonging life by promoting more wholesome microbial conditions throughout the intestinal tract, cannot be made to grow there by administration of living cultures of the organism. On the other hand, it seems to be fairly well established that the somewhat related *Bacillus acidophilus* is more easily adapted to intestinal growth by implantation. Consequently, efforts to secure therapeutic advantages through administration of lactic acid producing bacteria have of late been directed to this species. It is nonputrefactive and apparently harmless in nature. Whether and, if so, to what extent the administration of cultures of *Bacillus acidophilus* is actually efficacious in correcting disorders of the intestinal tract cannot be answered categorically at present. It would not be difficult to secure an abundance of testimonials with respect to a variety of wholesome effects attributed to the administration of the micro-organisms.

It should be recalled, however, that fermented and soured milks have long had considerable vogue, notably in the field of pediatrics; and even severe critics will admit that for certain types of gastric and intestinal disturbances soured milks exhibit some dietary advantages. As a consequence, pseudoscientific promotion of lactic acid producing bacteria has become familiar, and in some instances it approaches outspoken quackery. The Council on Pharmacy and Chemistry of the American Medical Association [1] has attempted from time to time to issue conservative, tolerant statements regarding the status of the uncertain lactic acid bacillus therapy. Furthermore, it has endeavored to establish the conditions under which alone, if at all, actual implantation effects can be expected. Thus, acidophilus milk and broth cultures and concentrates of *B. acidophilus* are not considered acceptable unless the number of viable organisms contained in a stated quantity is clearly stated, and the broth cultures and concentrates are made to indicate the need of the coincident administration of carbohydrates, such as lactose and dextrins. Other preparations of *B. acidophilus,* such as tablets, emulsions and candies, will not be accepted unless adequate evidence is presented that implantation of the bacteria may be secured through their use.

The wisdom of the Council's cautions is indicated by the recent investigations of James [2] in the microbiologic laboratory of the Bureau of Chemistry, U. S. Department of Agriculture. This survey of a number of marketed preparations indicated that samples representing cultures of both *B. acidophilus* and *B. bulgaricus* are not infrequently worthless. As was anticipated, the milks showed the highest average counts, the whey cultures next to the highest, and the solid cultures the lowest. Contaminating micro-organisms were also more common in the latter. Out of more than a hundred samples of the various sorts examined, only thirteen produced in reasonably fine form and in satisfactory numbers the species claimed on the label. The latter is an important item in view of the fact that successful implantation unquestionably requires introduction of massive doses. It is significant that the government writer makes a plea for a revision of the current methods of marketing acidophilus and bulgaricus cultures, and for adequate, scientific supervision of the purity and viability of such products. The layman and the physician alike should be made to realize that, as James points out, there are few commodities on the retail market the quality of which is so dependent on scientific control as the preparations of lactic acid micro-organisms.

1. The Present Status of Bacillus Acidophilus and Bacillus Bulgaricus Therapy, J. A. M. A. **87**: 172 (July 17) 1926.

2. James, L. H.: Commercial Bacillus Acidophilus and Bacillus Bulgaricus Cultures and Preparations, J. A. M. A. **89**: 89 (July 9) 1927.

THE PHYSICIANS' HOME, INC.

Among the numerous philanthropies to which physicians are being urged to contribute, few have occasioned so much interest during the last five years as the project to establish a national home for indigent and incapacitated physicians. The idea itself is obviously such as will arouse at once the tender compassion of those whose occupation is compassionate. When the heart-strings are wrung, reason retires. Few physicians stop to inquire whether there is any considerable number of physicians requiring such a home, whether they would enjoy such an institution once they consented to retire to its sheltering walls, whether the plan for a home is sound economically, and whether the burden is such as the medical profession as an organization might well undertake. The House of

Delegates, at its meeting in Dallas, authorized the appointment of a special committee to answer these questions. This group, headed by Dr. George H. Simmons, the distinguished editor and general manager emeritus of the Association, made its report at the recent session in Washington.

A survey conducted by communication with the secretaries of county medical societies throughout the country revealed that there were a few cases of temporary pecuniary stress brought on by illness, by accident, or by other causes that called for temporary relief only, and exceedingly few of permanent indigence. Several state associations and county medical societies have well defined plans for meeting these needs; they render aid quietly and without publicity. The results of the investigation convinced the committee that the need for a national home for incapacitated and indigent physicians is not sufficient to warrant the American Medical Association in establishing, managing and sustaining a home. The committee did not consider the matter from the economic point of view alone. "To remove a physician from the community in which he had long practiced and in which he had many old patients as well as friends, both lay and medical, would be unkind," says the report. "Old people cling to their old associates, and an old physician is not an exception. The committee believes that it would be better to render such aid as would make it possible for a physician, indigent and incapacitated, to end his days among those whom he knows and who know him."

During the time when the official committee of the American Medical Association was making its investigation, the corporation concerned in the promotion of the plan for a national physicians' home was engaging in several ventures to provide money for the purpose. A theatrical benefit seems to have turned out somewhat of a fiasco so far as concerned any important contribution to the good of the medical profession. The most recent exploit seems to be the publication of a large tome to be called "A History of the Physician." The prospectus, bound in imitation leather, colored maroon and stamped in bronze, is typical of similar devices. Gimcracks and ginger-bread adorn its pages. Imposing lists of sponsors, officers, directors and sponsoring committees are supplemented by a list of cooperating organizations, in which appears somehow the name of the American Medical Association. This inclusion is absolutely unauthorized and without warrant. The table of contents indicates that the book will begin with primitive medicine and consider every possible aspect of medical history and medical relationships, many chapter headings being left blank so that the prospective purchaser may use his own imagination. There are pages in the prospectus devoted to architects' drawings of homes in Virginia and Connecticut that may be used if all the plans go through. There are pages devoted to "God Bless Our Home" mottoes planned to confer a feeling of satisfaction on the prospective medical contributor. There are pages with facsimiles of letters from the medical great and near great, many of whom have apparently endorsed without enquiring. There are no pages of advertisements but many of the corporations that thrive on medical patronage have already purchased all or parts of pages, and some of the advertisers on this list could not even get into a respectable newspaper. At least a dozen advertisements may concern preparations not accepted by the Council on Pharmacy and Chemistry for New and Nonofficial Remedies.

The modern philosopher might well wail: "Charity, Charity, what sins are committed in thy name!" Inveigled into dozens of philanthropic schemes for the benefit of mankind in general, donating his services constantly where they ought to be purchased, the doctor is now asked to contribute toward the support of a venture for the care of the indigent and incapacitated among his own group, which includes at the same time, no doubt, at least the usual percentage for the promoter. If he does so, let it be with a full understanding of the situation. A representative committee of the American Medical Association has declared the scheme unsatisfactory from many points of view. The officers of the Association are continuing the study to determine the extent of the need for financial assistance by reputable physicians who have fallen upon hard times.

"KEEP AWAY FROM MONTREAL"

The remarkable report on the Montreal typhoid epidemic recently made by a board of officers of the U. S. Public Health Service and previously abstracted in THE JOURNAL [1] gives, perhaps, as much as may ever be known about one of the most deplorable outbreaks of modern times. The dimensions of the epidemic alone—4,755 typhoid cases between March 1 and June 28, 1927—mark it as the most extensive epidemic of the twentieth century and one of the worst ever recorded anywhere.

Perhaps the most unexpected and altogether astonishing thing about the Montreal outbreak is the way in which the situation was handled, or rather not handled. Although the epidemic apparently originated about February 15, it seems to have been allowed to drag on for weeks, and after suffering temporary cessation between March 27 and April 20, to break out afresh in another sharp rise culminating early in May. Through all this period the city health officer, although cognizant of his responsibilities, was never given service and equipment to meet the emergency.

The report cited indicates that the cause of the outbreak was of relatively simple character and might have been readily controlled at an early stage, thereby saving untold suffering and loss of life. The raw milk coming to one of the large dairy companies was derived

1. Report of Board on Typhoid in Montreal, General News, J. A. M. A. 89: 217 (July 16) 1927.

from a district in which sanitary conditions were unsatisfactory. If this milk had been pasteurized efficiently and completely, the danger might have been averted. There is reason to believe, however, that more raw milk was received at the pasteurizing plant than was ever run through the pasteurizer. In other words, raw milk from a typhoid-infected district was delivered to many consumers in the city of Montreal during a prolonged period. This is obviously a situation which might have been discovered early and remedied promptly. The medieval indifference that allowed a devastating typhoid epidemic to run on week after week without adequate investigation or the application of easily applied methods of prevention is no matter for civic pride. The citizens of Montreal will doubtless have a day of reckoning with the officials responsible for this disaster.

Meanwhile the obligation of American sanitarians to our own people is clear. Montreal and its vicinity constitute for the present a dangerous locality. Who knows how much typhoid is still developing in that region? The number of new cases of typhoid reported for the ten days ending June 28 averaged more than ten a day according to the report of the investigating board. In any case there has been unquestionably in Montreal and its neighborhood an enormous increase in the number of typhoid carriers and typhoid convalescents. Some of these are doubtless at the present time engaged in the preparation or handling of food, so that secondary cases or even minor epidemics may be expected. For some time to come the whole region is hardly a safe playground for American tourists. It is with ample justification that sanitary authorities in the United States are passing round the warning, "Keep away from Montreal!"

FOODS IN DIABETES

The selection of suitable foods has always played an important part in the management of diabetes. A generation ago the chief concern was centered in the reduction of the carbohydrate intake; consequently, in the choice of articles of diet preference was given to those relatively poor in sugars and starches. The expression "diabetic food" came into vogue to designate a variety of products, some of them specially selected or prepared for this use, and all having in common a content of carbohydrate notably below that of ordinary products of the same class. An official definition was presently formulated by governmental authority, permitting the application of the term diabetic to indicate that a food contains "not more than half as much glycogenic carbohydrates as the normal food of the same class." Thus "diabetic flours" came into some vogue.

The outlook on the dietotherapy of diabetes has been considerably altered in more recent years. It is no longer merely the carbohydrate in the food that merits attention. Sugar can be formed from protein; consequently this nutrient deserves consideration. In the management of the possible ketosis, the choice of a regimen in which the ketogenic-antiketogenic ratio of the foodstuffs comes into question must also be taken into account. On this basis the fat intake may need restriction. Furthermore, the possibility of using insulin where it seems desirable has in turn made a revision of the proportions of the different foodstuffs possible in suitable cases.

A recent writer has pointed out that the term diabetic, as applied to foods, has been much abused in the past; many foods which differ little from common foods of the same class have been designated by that term. Moreover, it may be true that some patients have been led to believe that foods bearing the qualification "diabetic" are curative or mitigative in themselves rather than merely dietetic adjuncts. For these reasons regulatory officials have become inclined to discourage the use of the term diabetic as a part of the name of these special foods and in explanatory literature concerning them. Accordingly there is no longer any federal definition of a diabetic food.[1] Since such products are offered as dietetic aids in the control or mitigation of disease, they are regarded by food control officials as therapeutic agents rather than as foods and more properly regulated under the provisions of the Food and Drugs Act which refer to drugs.

The chemist of the Connecticut Agricultural Experiment Station at New Haven, which has for many years given considerable attention to the analysis of special foods offered for use in the dietary of the diabetic patient, has also abandoned the term "diabetic food." In his latest review, Bailey[2] remarks that successful diets for patients with diabetes may be formulated by proper selection of common foods quite as well as by the use of special foods, although there can be no objection to such special foods when offered without misrepresentation. Many of them, no doubt, serve useful purposes. Such special products, he adds, are expensive in most cases, however, and many physicians hesitate to encourage their use for that reason. Because of this, and also because of the increased tolerance which the use of insulin affords, the utilization of common foods is of increasing interest to the physician and to the patient.

These attitudes make it increasingly more important for the physician and the dietitian to become familiar with the composition of ordinary as well as special foods. The new report of the Connecticut Station is a welcome addition to the available sources of information in that it gives the appropriate analyses of many hundreds of both classes of foods. Like its predecessors it will be a vade mecum regarding the numerous

1. Revoked by U. S. Department of Agriculture, food inspection decision 199.

2. Bailey, E. M.: The Thirty-First Report on Food Products and the Nineteenth Report on Drug Products, Part I, Analyses of Common Foods and Special Foods, Bull. 286, Conn. Agr. Expt. Station, April, 1927. This bulletin is mailed free, so far as the edition permits, to all who apply for it to the Connecticut Agricultural Experiment Station, New Haven, Conn.

products marketed with special claims of usefulness in the diabetic dietary. With this pamphlet at hand there is no justification whatever in prescribing to patients a high priced advertised "diabetic" food that may include, as sometimes is the case, 50 per cent or more of starch in its make-up. Dr. Bailey has again performed a useful service in providing reliable information as to the composition of these foods for the guidance of physicians, dietitians and others interested in diabetes and in diabetic treatment.

Current Comment

THE PULMONARY CIRCULATION TIME

The circulation time, by which is meant the period that elapses while a substance introduced into the blood stream completes the circuit of the vascular system and returns to the place of introduction, has long since been measured and has become a well defined fact of physiology. When one considers that the circulatory route to be traversed includes the slower streams of the capillary beds of both the systemic and the pulmonary systems as well as the more rapid channels of the arterial and venous vessels, the time involved—amounting to seconds rather than minutes—is surprisingly small. In the pulmonary circulation the blood must traverse the enormous network of lung capillaries where the gaseous exchanges with the respired air take place. The chambers of the heart also offer some resistance, which demands time for its mastery. The duration of this pulmonary circulation time has recently been measured in man for the first time by Blumgart and Weiss.[1] The average duration in resting males is only six and five-tenths seconds, with a range extending from four seconds to eleven seconds. This is a marvel of physiologic "rapid transit" which is surpassed by few bodily functions aside from those that occur in "the twinkling of an eye."

INCUNABULA AND WOODEN NUTMEGS

It is alleged that an early Connecticut Yankee made and sold wooden nutmegs. Evidently not all of those who possessed his type of genius came over in the *Mayflower*, or in the various galleons, caravels, barks, brigs, barkentines and packets that followed that capacious little craft to these shores. A certain number remained in the old country, that they and their offspring might conduct an uninterrupted old home week for returned Americans. For a consideration, the descendants of these old inhabitants will part with such ancient books, manuscripts and incunabula as have come into their possession. The embarrassing matter of the consideration involved invites remark, although the fault does not all lie with the old inhabitants. Until about two years ago a collector of old medical books could put aside small coins in a corner of his escritoire with confidence that eventually he could acquire from his dealer some old work on which he had set his heart. The market was more or less stable. Such a collector knew values, and book sellers were aware that he knew them. Then came an influx of tourists, largely from America, too many of whom had unlimited letters of credit and a limited sense of values. Prices of old medical books began to climb. Formerly the Aphorisms of Hippocrates, edited by François Rabelais in 1543, could be bought for from $60 to $80. In a recent Paris catalogue it is listed at the equivalent of $160. Perhaps an occasional American physician gets his money's worth if he can show such a work to the boys in the medical society back home, but this is not the attitude of the discerning American collector. The achievements of American medicine are respected in Europe, but the disposition of many Americans to allow themselves to be exploited by continental antiquaries does not pass for culture on either side of the water.

THE BRIGHT'S DISEASE CENTENARY

On July 8 an interesting ceremony took place in Guy's Hospital in London to celebrate the discovery one hundred years previously of Bright's disease by Dr. Richard Bright, who was physician to that hospital from 1820 to 1843. The proceedings included a demonstration of the pathology of Bright's disease by Prof. Ludwig Aschoff of the University of Freiburg, a discourse on the physiology of the subject by Professor Lemierre of the University of Paris, a luncheon, and the Bright Memorial Oration delivered by Dr. W. S. Thayer, President-Elect of the American Medical Association. In his address, Dr. Thayer outlined the life and education of Richard Bright leading to the publication of his first book at the age of 26. In 1820 Bright became assistant physician at Guy's Hospital and for the next seven years devoted himself to clinical study and particularly to morbid anatomy, publishing in 1827 his famous "Reports of Medical Cases Selected with a View of Illustrating the Symptoms and Cure of Disease by a Reference to Morbid Anatomy." Professor Thayer credited Bright also with anticipating what is now the accepted method of conducting medical research, namely, by cooperation and team work. At the conclusion of his address, which is to be published in full in the *Guy's Hospital Reports*, Dr. Thayer was presented with a unanimous vote of thanks and then with the Bright Memorial Medal. In tendering him the medal Lord Balfour thanked Professor Thayer for his presentation of a great man of science who was also a beautiful character, and took delight in the fact that he himself had recommended Sir William Osler to the regius professorship at Oxford, so that he was partly responsible for the succession by Dr. Thayer to Osler's position at Johns Hopkins University. The occasion was a felicitous demonstration of the international character of medical science and of the recognition of scientific achievement. The American representative could not have been better chosen as an example of leadership in clinical practice, in research and in medical organization.

1. Blumgart, H., and Weiss, S.: The Normal Pulmonary Circulation Time in Man, Am. J. Physiol. 81: 466 (July) 1927.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

CALIFORNIA

Licenses Revoked.—At the meeting of the state board of medical examiners, San Francisco, June 28, the licenses of Drs. Frederick K. Lord, Ceres, Eldridge R. Morlan, Fellows, and Willie E. Williams, Los Angeles, were revoked.

"Professor" Kimbro Arrested.—An agent of the state board of medical examiners brought about the arrest recently of "Prof. S. I. Kimbro" of Los Angeles, on a charge of violating the medical practice act. Professor Kimbro is said to have a city physical culture license, and to call his place "The Kimbro Health Institute." He has a treatment room where he prescribes diet, exercise and gives manipulative treatment. John Mackay of Redlands went to see Kimbro, recently, and was injured at his first examination to such an extent that he had to remain in Los Angeles under the care of a physician for about two months. Professor Kimbro is said to have secured from another patient $1,000 in cash by giving a chattel mortgage on his "autonormalizer."

Zoological Hospital Offers Facilities to Physicians.—About 135 physicians and other scientists attended the recent dedication, sponsored by the Zoological Society of San Diego, of the Zoological Hospital and Research Institute, San Diego, which is a gift of Miss Ellen C. Scripps. Physicians interested in research are invited to avail themselves of its facilities, no charge being made except for material used or broken. The building is located in a large zoological garden. It will be a hospital for animals in the zoo and pathologic tissues from zoos throughout the country will be collected for a study of animal diseases. Physicians, research workers and students in biology will find here the necessary equipment for carrying on research. There are eleven small laboratories, each equipped for special work, a roentgen-ray and dark room, a library, general laboratory, technician's laboratory offices and morgue and a photomicrographic outfit. The plan is to afford college professors and advanced students an opportunity to continue studies when in California, and to attract biologists interested in avian and mammalian research, as do some noted marine biologic stations. Further information will be given on request to the hospital, Balboa Park, San Diego. Dr. Rawson J. Pickard is chairman of the hospital and research committee, and H. C. Goodsil, director of research and education.

DISTRICT OF COLUMBIA

Nation's Capital a Paradise for Cultists.—The Washington *Evening Star* has published a series of front page articles which purport to show the inadequacy of the medical practice act of the District of Columbia, and that unqualified practitioners are permitted to treat human ills. According to the *Star*, there are about 300 practitioners of various kinds who have been permitted to open offices and use the title "doctor" without an examination to determine their qualifications. A reporter who claims to be in good health visited six different practitioners, including two chiropractors, an osteopath, a naturopath, an electrotherapist and an iridologist to find out what caused his alleged symptoms which were a "pulled feeling" and a "desire to refrain from active work." The first chiropractor is said to have told the patient that he had "two subluxations of the spine"; the second chiropractor told him that he had three spinal curvatures affecting the heart, liver and kidneys; Dr. "Three," an electrotherapist, said that he had a collapsed abdomen; Dr. "Four," a naturopath, told him that he had run-down glands; Dr. "Five," an iridologist, said that he had an abscessed stomach and that his transverse colon was "all shot"; Dr. "Six," an osteopath, said that he had faulty metabolism and two slight osteopathic lesions of the spine which could be remedied by about two months of steady treatment. The reporter considered that that was enough. In his articles he points out that doctors of medicine in Washington are licensed after an examination; also that there are laws which govern the conduct of banks, and that the plumbers are licensed, but that there is a host of drugless healers in town who are "incapable of telling a man that his tongue is coated" who are permitted to treat the human body without license, without examination, without inspection, without any standard by which their skill may be measured. The medical practice act of the District of Columbia makes it unlawful for any one to practice medicine and surgery without having been licensed to do so.

FLORIDA

Personal.—Dr. William N. Parkinson has assumed the duties of chief surgeon of the Florida East Coast Railway vice Dr. Joseph N. Fogarty.——Dr. Joseph L. Kirby-Smith, Jacksonville, chairman of the section on dermatology and syphilology of the Southern Medical Association, received the honorary degree of doctor of science at the fifty-ninth commencement of the University of the South, Sewanee, Tenn.; General Gorgas received the only other degree of this kind that the university has granted.

Society News.—The Duval County Medical Society, Jacksonville, June 7, held a symposium on pellagra, with Dr. Joseph L. Kirby-Smith discussing the dermatologic point of view; Dr. Stanley Erwin, the internist's point of view; Dr. James H. Randolph, that of the neurologist, and Dr. James Frank Wilson, treatment. Dr. Wilson presented two cases which had been successfully treated with neoarsphenamine and diet.——At the June 14 meeting of the Volusia County Medical Society, a basket picnic was held at the De Leon Springs, attended by about seventy-five persons, including the families of the members. The meeting was so enjoyable that another outing this summer has been planned which will be held at Daytona Beach.——At the recent meeting of the Suwanee River Medical Society held at Jasper, Dr. J. Marvin Price, Live Oak, read a paper on "Anesthesia in Childbirth," and Dr. Daniel Newman Cone, White Springs, read a paper on "Hydrophobia." At the June 10 meeting of the society, Dr. James Knox Simpson, Jacksonville, spoke on "Congenital Hypertrophic Pyloric Stenosis," and Dr. Wilfred M. Shaw, Jacksonville, demonstrated this condition with lantern slides.

IDAHO

State Medical Meeting.—The annual meeting of the Idaho State Medical Association will be at Twin Falls, August 29-31, under the presidency of Dr. Duncan L. Alexander, Twin Falls, who will deliver his address at the banquet at the Rogerson Hotel, Tuesday evening; Dr. Joseph A. Pettit, Portland, Ore., a trustee of the American Medical Association, will speak on "Periodic Health Examinations and Public Health League." Tuesday morning, following a series of clinics and visits to the local hospitals, Dr. Constantine F. Kemper, Denver, will speak on "Treatment of Diabetes and Its Complications"; Tuesday afternoon, Dr. Joseph Aspray, Spokane, Wash., will speak on "Electrocoagulation of Accessible Malignant and Nonmalignant New Growth," and Dr. Clifford G. Grulee, Chicago, "Clinical Course and Treatment of Lobar Pneumonia in Young Children." Wednesday morning, Dr. George A. Downs, Spokane, Wash., "Gasserian Ganglion Surgery"; Dr. Grulee, "Roentgen-Ray Manifestations of Bone Change in Children," and Dr. Kemper, "Diagnosis of Goiters." Other speakers whose subjects have not yet been announced will be Drs. James Tate Mason, Seattle; Isaac H. Moore, Seattle; William C. Finnoff, Denver; Paul B. Magnuson, Chicago, and several physicians of the state of Idaho.

ILLINOIS

Personal.—Dr. Franklin T. Brenner, Quincy, was guest of honor at a banquet, June 9, given by his associates and friends to celebrate the completion of twenty-five years as a member of the staff of St. Mary's Hospital.——Dr. Edwin J. Kehoe, Dayton, Ohio, has assumed the duties of superintendent and medical director of the county tuberculosis sanatorium at Pontiac.——Dr. Earl B. Miller has resigned as medical director of the Elm Grove Sanatorium, Bushnell, effective, July 31, to become medical director of Hillcrest, the Adams County Sanatorium.

Chicago

Society News.—The recently elected officers of the Chicago Tuberculosis Society are Dr. Walter H. Watterson, president; Dr. Edwin B. Tuteur, vice president, and Dr. Samuel

A. Levinson, secretary-treasurer. There will be no meetings of the society until October.

New Telephone Arrangement.—The Chicago Medical Society, since July 1, has connected its switch board with the Doctors' Private Wire Service, 208 West Washington Street. At the close of the day, the society notifies this service to take the calls for nurses, and they are given a list of available graduate, undergraduate and practical nurses. Their secretaries are on duty at all hours, so that when a nurse is needed it is only necessary to phone in the usual way. This arrangement makes unnecessary the employment of evening and night attendants at the society's office.

State Opens Laboratory in Chicago.—A new laboratory for diagnosis was opened in the Illinois Research Hospital Building, 1817 West Polk Street, July 18, under the direct supervision of the state health department. Dr. Lloyd Arnold, professor of bacteriology and preventive medicine, University of Illinois College of Medicine, will be in charge. The laboratory services, it is reported, will be free to physicians and other citizens of the state. Several rooms in the basement of the research hospital have been set aside for this work. There is a full-time staff of bacteriologists, serologists and chemists.

INDIANA

Appointments to State Podiatry Board.—Drs. Eldridge M. Shanklin, Hammond, and Jesse W. Bowers, Fort Wayne, members of the Indiana State Board of Medical Registration and Examination, were reappointed members of the Indiana State Podiatry Board. These physicians, along with Ross S. Hackett, Michigan City, and Daniel R. Tucker, Indianapolis, podiatrists, form the podiatry board, which is under the supervision of the state board of medical registration and examination.

Personal.—Dr. John S. Ragan, Plainfield, celebrated his fiftieth anniversary as a practitioner of medicine, July 9.——Dr. Edwin Rogers Smith addressed the Indianapolis Rotary Club at the Claypool Hotel, July 19, on "Mental and Nervous Cases and Treatment."——Dr. Charles A. Miller, Princeton, secretary of the Gibson County Medical Society, has been appointed surgeon to the Southern Railway System to succeed the late Dr. Robert A. Cushman in that district.——Drs. Edgar F. Kiser, Fred E. Gifford and Judson D. Moschelle, all of Indianapolis, will attend the International Congress on Goiter to be held at Berne, Switzerland, August 24-27.——Dr. Levi B. Hill, Seymour, president of the Jackson County Medical Society, has retired from the practice of medicine because of ill health, and has gone to Baraboo, Wis., to live with his son.

Medical Library at South Bend.—About fifteen years ago, Drs. Stanley A. Clark, Roscoe L. Sensenich and Charles S. Bosenbury of South Bend jointly subscribed $500 to equal a public appropriation for a medical section in the South Bend Public Library. They also donated books from their own libraries. Thus began a medical library which now amounts to about 3,000 volumes and fifty medical journals. Books have been donated by persons in several states, and one of the most prized collections is a complete bound set of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. There are other volumes of historical interest, some very old. The librarian each year requests the president of the St. Joseph County Medical Society to recommend books which would interest physicians. A fund is provided by the board of education to buy books, and the county medical society supplements this to purchase medical periodicals in several languages.

Society News.—The dentists were hosts at a dinner given to the Sullivan County Medical Society, June 15, at the Sullivan Country Club; there was a musical and literary program.——Members of the Tri-County Medical Society and their families were guests of the Henry County Medical Society, July 19, at a picnic at the Westwood Country Club, New Castle; there was a scientific program, and the day was spent in golf, tennis and other sports.——Dr. David S. Linvill, Columbia City, addressed the Whitley County Medical Society, July 12, on "Contagious Diseases," and Dr. Ernest V. Nolt on "Pains in the Chest and Abdomen."——Dr. Robert M. Moore, Indianapolis, addressed the Carroll County Medical Society, Delphi, July 13, on "Drug Therapy in the Treatment of Heart Disease."——The Ravdin medal, awarded annually, will be given this year to Perry Wilson Bailey of the senior class of the Indiana University School of Medicine for having made the highest average in the four years' medical course.

KENTUCKY

Personal.—Dr. Flora W. Mastin, Frankfort, has been appointed assistant physician at the Eastern State Hospital, Lexington, effective, July 1, succeeding Dr. Minnie C. Dunlap, who held the position for many years and who has resigned on account of ill health.——Dr. Griffin C. Kelly has been appointed city health officer of Louisville; Dr. Heman Humphrey, assistant city health officer, and Drs. William C. Poulson and Joseph H. Green, city physicians for the eastern and western districts, respectively.

Society News.—At a meeting of the Adair, Green and Taylor county medical societies, June 9, Dr. William Edgar Fallis, Louisville, read a paper on "Diagnosis of Acute Abdominal Maladies"; Dr. Robert Julian Estill, Lexington, on "Infant Feeding in Hot Weather," and Dr. R. Hayes Davis, Louisville, on "Chronic Myocarditis."——Dr. William E. Gardner, councilor of the district, attended a meeting of the Owen County Medical Society, May 26, accompanied by Dr. Stephen C. McCoy, who gave an illustrated address on "Diseases of the Kidney and Bladder"; Dr. Edward Speidel, Louisville, spoke on "Obstetric Emergencies," and Dr. Virgil E. Simpson on "Diabetes Mellitus."——The Perry County Medical Society, Hazard, held its semiannual ladies' night meeting, July 11; following a banquet served by the ladies, Dr. William E. Ray, president of the society, spoke on "The Doctor's Wife," and Mrs. Robert L. Collins and Mrs. Amerdia M. Gross read an instructive and entertaining paper on a similar subject.

MARYLAND

Society News.—Members of the Mental Hygiene Society of Maryland, representatives of charitable and social agencies in Baltimore City, and superintendents of various state hospitals met at the Hotel Emerson, Baltimore, June 30, to discuss the new mental hygiene clinic to be established this fall in the University of Maryland School of Medicine. Dr. Ross M. Chapman, professor of psychiatry at the university, presided.

Typhoid Epidemic.—Four cases of typhoid have developed in two families at Lonaconing, Allegheny County, and the city health officer of Cumberland and county nurses have been conducting inoculation clinics at the Lonaconing health center to prevent the spread of the disease. The source of the infection has been traced to a polluted spring on Big Vein Hill, and the Lonaconing city council has been urged to make immediate arrangements for establishing a sewer system for that section.

Personal.—Dr. Frank W. Keating, superintendent, Rosewood State Training School, was elected president of the University of Maryland Alumni Association in June, and Dr. Charles H. Bubert, secretary.——The honorary degree of doctor of science was conferred on Dr. John J. Abel, professor of pharmacology, Johns Hopkins University School of Medicine, by Yale University, June 22.——Dr. Dean Lewis, professor of surgery, Johns Hopkins University School of Medicine, Baltimore, received the honorary degree of doctor of science from the University of Wisconsin at the recent commencement.——Knight Dunlap, Ph.D., professor of experimental psychology, Johns Hopkins University, Baltimore, who has been appointed chairman of the division of anthropology and psychology of the National Research Council, has been granted a year's leave of absence by the university, and will take up his work in Washington, D. C., about September 1.

MASSACHUSETTS

Hospital News.—The Amesbury Community Hospital was dedicated with appropriate ceremonies, May 13. It is a thirty bed, modern hospital; in 1925 a drive for funds was made in the surrounding communities which totaled more than $125,000 for the hospital.

Personal.—Dr. Alice Hamilton, assistant professor of industrial medicine, Harvard University, Boston, received the honorary degree of doctor of science at the recent commencement of Smith College.——Dr. John M. Birnie, Springfield, has tendered his resignation to the governor as member of the board of registration in medicine on account of the duties imposed by his recent election to the presidency of the Massachusetts State Medical Society.——Dr. Harvey Cushing, professor of surgery, Medical School of Harvard University, Boston, received the honorary degree of master in surgery at the summer commencement of the University of Dublin, Ireland.

Professor Koffka Appointed to Chair of Research.—Prof. Kurt Koffka of the University of Giessen, Germany, has been appointed to the new Neilson chair of research at Smith College for a period of five years. Professor Koffka is now visiting professor at the University of Wisconsin. He has taught at several universities, and is reported to be the author of books and articles translated into several languages. He and Professors Kohler and Wertheimer of the University of Berlin are said to be responsible for the experiments that lead to the development of the Gastalt theory in psychology. In his work at Smith, Professor Koffka will be free to study and experiment as he desires, publishing the results or not as he prefers, but he is not expected to teach. The Neilson chair of research has been established by friends of Dr. Neilson in honor of his tenth year as president of Smith College.

University News.—At the recent commencement of Harvard University, it was announced that during the year 1926-1927 the university had received gifts of $6,003,372, in addition to the subscriptions to the endowment campaigns and to the alumni endowment fund, and the income received under the will of Gordon McKay. Those pertaining to medical science included $100,000 from the estate of Richard Dana Bell for biologic chemistry; $188,400 from the General Education Board for the department of ophthalmology; for medical and surgical science, $237,081 from the estate of Arthur S. Luke; for the school of public health, $137,250 from the Rockefeller Foundation; $100,000 from Dr. Frederick C. Shattuck, Boston, to establish the Richard P. Strong Fund in tropical medicine, and $470,000 from Harold S. Vanderbilt for the medical school dormitory and the salary for an instructor in physical training in the medical school.

MINNESOTA

Society News.—A gold watch with an appropriate inscription was presented to Dr. Herman M. Johnson, Dawson, at the recent banquet of the Minnesota State Medical Association; Dr. Johnson is a former president of the state medical society.——The West Central Minnesota Medical Society will hold its next meeting, October 12, at Morris. The society held an outing, June 19, at Ortonville, as the guest of Drs. Bolsta, Karn, O'Donnell and Shelver.

Medical Committee Surveys Hospital.—Following the endorsement of the Hennepin County Medical Society at the last annual meeting, its president appointed a committee of seven members to survey the general hospital at Minneapolis. The committee on health and hospitals had previously held a special meeting to discuss a proposed increase in the capacity of the hospital; the appointment of the survey committee arose out of this discussion. The committee was requested by the council committee of seventeen to broaden the scope of the survey so as to furnish a report which would indicate the further needs of the hospital. Before proceeding, the subject of the survey was formally placed before the board of public welfare which authorized the survey with the understanding that a report should be submitted to the board before being published or given to any other organization. There is no question, it is said, of the popularity of the general hospital, but before increasing the bed capacity, it was considered best to analyze the hospital situation and to determine its normal function. Among the conclusions reached by the committee were the following:

That the general hospital has assumed a function and a dignity in the community which is not consistent with its normal character, which was never contemplated by its creators, and which is not in accordance with the intent of the laws governing its existence, and which has imposed an unnecessary burden on the tax-paying part of the community.

That, under the present standard for indigency as used for admission to the hospital and dispensary, an unreasonably large part of the population would be eligible to free care.

That the present methods of investigation of persons is inadequate and inaccurate and encourages the use of these facilities by many persons who are not entitled to public relief.

That an appreciable number of people are now admitted who do not necessarily require hospital care.

That the present system of computing the obligations of the part-pay patient is unsound and based entirely on inadequate information.

That the present congestion in the hospital is due to some extent to the presence of patients not entitled to service in a charity institution.

That it is impossible to estimate or predict either the present or future needs of the general hospital until a thorough system of investigation of applicants and a better scheme of indigency has been established and in operation for at least two years.

Among the recommendations were the following:

That the board of public welfare be requested to establish an "admitting and collection department" for the general hospital and auxiliary institutions, this department to be in charge of a trained financial investigator and credit man who will have complete control of the eligibility of all persons making application for hospitalization or treatment at public expense and be responsible only to the board of public welfare.

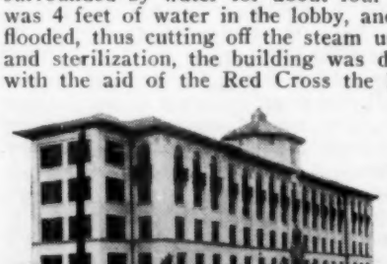
That an advisory committee be created, composed of one member of the board of public welfare, one member of the Hennepin County Medical Society, and one member from the Minneapolis Tax-Payers' Association; this committee to meet twice a month with the admitting officer for the study of questionable and borderline cases with a view to developing satisfactory rules for his guidance.

MISSISSIPPI

Personal.—Dr. Henry Boswell, Jr., Sanatorium, has been elected president of the American Sanatorium Association, and also reelected on the executive board of the National Tuberculosis Association.——Dr. William W. Reynolds, Meridian, has been reappointed health officer of Lauderdale County.——Drs. Benjamin L. Newell, Greenville, and W. F. Hand, Lumberton, have been appointed resident physicians at the Mississippi Charity Hospital.——Dr. James B. Black, Jr., has resigned as director of the Hinds County Health Department to accept a position with the American Child Health Association for work in Tennessee; Dr. Calvin C. Applewhite will serve as health officer until a successor to Dr. Black has been selected.

Society News.—Among others, Dr. Leslie V. Rush addressed the East Mississippi Medical Society, Newton, June 16, on "Functions of the Gallbladder," and Dr. Samuel H. Hairston on "Cases That Need Early Diagnosis." The next meeting will be at Meridian, August 18.——Dr. Leon S. Lippincott addressed the Issaquena-Sharkey-Warren County Medical Society, Vicksburg, July 12, on "Prognosis in Kidney Disease"; Dr. Ewing F. Howard, "Medical Ethics," and Dr. Isaac C. Knox, "Intestinal Infections in Children."——The Tri-County Medical Society met, June 14, at Tylertown, devoting its program to infant feeding and infectious diarrhea in children. Papers were presented by Drs. Robert E. Sylverstein, De Witt T. Brock and Jesse E. Brumfield. The next meeting will be in Brookhaven, September 13.——The Homochitto Valley Medical Society met, July 14, at Natchez; Dr. Jacob S. Ullman presented a paper on "Treatment of Quinine Idiosyncrasy," and Dr. Richard D. Sessions, on "Postoperative Ileus." Dr. William R. Brumfield and William J. Grady presented a case of unusual temperature disturbance.

Hospital Surrounded by Water.—During the recent Mississippi flood, the Kings Daughters' Hospital, Greenville, was surrounded by water for about four weeks. Although there was 4 feet of water in the lobby, and the boiler rooms were flooded, thus cutting off the steam used for heating, cooking and sterilization, the building was damaged very little, and with the aid of the Red Cross the hospital still functioned in each department with a full quota of nurses and other employees working to help victims of the flood. Twenty-five babies were born in the hospital after the levee broke. The building represented here was opened in February of this year. The condition brought about by the flood makes it impossible for the hospital to meet its financial obligations without assistance, although up to the time of its disaster, it was self-sustaining, with an average of seventy-five patients, 10 per cent of whom were charity patients. Funds to the amount of $10,000 are being sought to help the hospital through this trying period, and to meet the demands that may come as a result of the flood.



MONTANA

State Medical Election.—At the annual meeting of the Medical Association of Montana, Missoula, July 13-14, Dr. George M. Jennings, Missoula, was installed as president; Dr. Alfred Karsted, Butte, was elected president-elect; Dr. William F. Hamilton, Havre, vice president, and Dr. Elmer G. Balsam, Billings, reelected secretary-treasurer. The next meeting, which will be the fiftieth anniversary, will be held at Great Falls in 1928.

NEW MEXICO

Outbreak of Infantile Paralysis.—Between the last week of June and July 19, thirty-four cases of infantile paralysis were reported to the state department of health with five deaths; twelve of the cases were from Chaves County; eleven from Eddy County; six from Union County, and one each from Bernalillo, Dona Ana, Grant, Harding and Otero counties.

NEW YORK CITY

Hospital News.—The Montefiore Hospital has announced that a hospital and administration building, a laboratory, a home for physicians and nurses, and other additions will be made to the Bedford Hills branch of the hospital.

Cuban Commission on Tour.—A commission from the medical faculty of the University of Havana, Cuba, is touring the United States visiting medical institutions under the auspices of the Rockefeller Foundation. The party includes Dr. F. Solano Ramos, dean of the school and chairman of the commission; Dr. Carlos Finlay, professor of ophthalmology; Dr. Aristides Agramonte, and Felix Martin, of the School of Engineers and Architects, who is in charge of planning the new medical building for the Cuban university.

Exhibition of Work For and By the Blind.—The New York State Commission for the Blind with the assistance of twenty organizations concerned with the care of the blind has assembled an educational exhibition of work for and by the blind residents of the state at the Art Center, 65 East Fifty-Sixth Street. The exhibition covers almost the entire ground floor of the Art Center, and it shows the handicaps under which the blind labor and the extent to which they have succeeded in overcoming them. The exhibit provided by the National Committee for the Prevention of Blindness shows how these handicaps may be avoided. There are exhibits in braille of music, books and magazines; a chart showing that the American Foundation for the Blind has distributed 2,500 radio sets to the needy blind throughout the country; a graphic chart showing that industrial accidents caused the loss of sight of one out of seven blind persons, and that venereal diseases blind or visually handicap thousands of persons. There is an exhibit of the handwork of blind persons who help to support themselves by making toys, doll wigs, mops, and brooms, or by sewing and other forms of needle work. The exhibit will be open until August 1 and admission will be free.

OKLAHOMA

Personal.—Dr. Walter G. Nash, Sparks, has assumed the duties of health officer of Lincoln County.——Dr. George E. Hartshorne, Tulsa, county superintendent of health, has been reappointed for a term of four years.

Warning—"Dr. Robert Trosky."—A physician from Tulsa writes that "Dr. Robert Trosky" applied to him recently for a position as assistant. He claimed to be a graduate of the University of Petrograd, and to have done hospital work in Minneapolis and Albany. He mysteriously disappeared a few days ago, leaving numerous bad checks in the hands of business men. There is no record of a "Dr. Robert Trosky" in the files of the American Medical Association.

PENNSYLVANIA

Society News.—Dr. James M. Anders, Philadelphia, addressed the Newcastle County Medical Society, May 19, on "Early Diagnosis of Cancer of the Stomach."——Dr. Oliver H. Jackson, Meadville, was elected president of the Northwestern Medical Society at its annual meeting at Erie, July 3.

Personal.—Robert T. Hance, Ph.D., of the Rockefeller Institute for Medical Research, New York, has been appointed professor of zoology and acting head of the department at the University of Pittsburgh.——Dr. Emlyn Jones, Johnstown, has been appointed in charge of the bureau of vital statistics of the state department of health.——Dr. John Ronald MacRae, Jr., has accepted the position of resident surgeon at the Moses Taylor Hospital, Scranton, Pa.

Philadelphia

Hospital News.—Four bandits held up the paymaster of the department of health, June 1, at the entrance to the Philadelphia Hospital for Contagious Diseases, and escaped with two hospital payrolls totaling about $13,000.——Dr. Joseph Edeiken has been reappointed chief resident physician of Mount Sinai Hospital for the ensuing year, and Dr. Charles Charny has been appointed assistant chief resident, a new position. Each year the intern considered most able is appointed chief resident, and in the following year is promoted to the rank of chief resident physician; on completion of this term, a fellowship for a year of special study in Europe will be provided by the board of trustees.——St. Joseph's Hospital opened a new maternity hospital with accommodations for forty patients, July 19.——The fourth floor of the new Samaritan Hospital will be known as the Roosevelt Memorial Floor, and the cost will be defrayed from funds donated to Temple University by the trustees of the abandoned Roosevelt Hospital.——The Children's Heart Hospital has purchased a tract of about 11½ acres north of Conshohocken Avenue and northwest of Windemere Avenue in the twenty-fourth ward, where, it is reported, a new structure costing more than $600,000 will be erected eventually. The hospital is now located at Fifty-Second Street and Wynnefield Avenue.

UTAH

Health at Salt Lake City.—Telegraphic reports to the U. S. Department of Commerce from sixty-six cities with a total population of about 29 million, for the week ending July 16, indicate that the lowest mortality rate (6.1) was for Salt Lake City, and that the mortality rate for the group of cities as a whole was 11.3. The mortality rate for Salt Lake City for the corresponding week last year was 11, and for the group of cities, 10.8.

WASHINGTON

State Medical Meeting.—The thirty-eighth annual meeting of the Washington State Medical Association will be held at Tacoma, August 29-31, with headquarters at the Winthrop Hotel, under the presidency of Dr. Harry G. Willard. Monday, at 8 o'clock, a golf tournament will be played at the Tacoma Country Club, and at 5 o'clock, Dr. Dean Lewis, Johns Hopkins University School of Medicine, Baltimore, will give a surgical clinic at the Tacoma General Hospital; Dr. Gladys R. H. Dick, Chicago will demonstrate the technic of the Dick test, and Dr. William P. Lucas, San Francisco, will give a diagnostic pediatric clinic at the Tacoma General Hospital; at 7:30 there will be a dinner-dance at the Country Club; Dr. Lucas will speak Tuesday on "Asthma in Children," and Dr. George F. Dick, Chicago, on "Present Status of Scarlet Fever Control." The North Pacific Pediatric Society Section will meet, Tuesday afternoon, when Dr. Lucas will speak on "Care of the Normal Infant," and among others, Dr. Harry C. Olmsted, Seattle, will read a paper on "Traumatic Lesions of the Diaphragm in Infancy and Childhood." The annual banquet will be Tuesday evening. There will be operative clinics at the local hospitals, Wednesday morning, and also papers by Drs. Arthur C. Crookall, Seattle, Charles R. Castlen, Seattle, and Albert B. Murphy, Everett; in the afternoon, Dr. Dean Lewis will read a surgical paper, and among others, Dr. Richard Hayes, Longview, will speak on "Intermittent Duodenal Stenosis." The proximity of Tacoma to Rainier National Park, to the ocean and to Puget Sound will afford physicians attending the state meeting an opportunity for a delightful vacation.

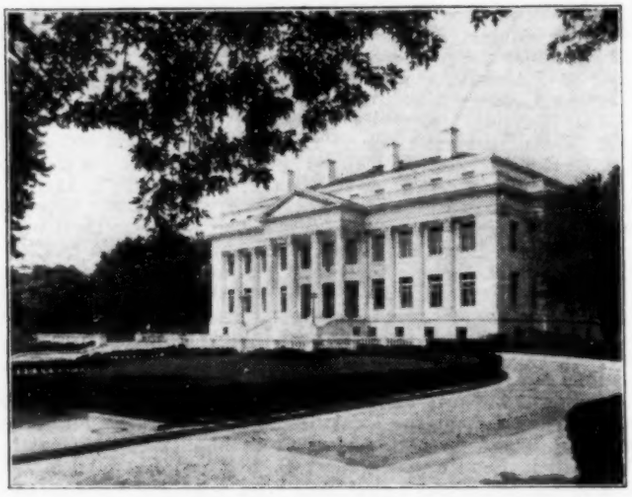
GENERAL

Application for Fellowships in Medicine.—In order to receive consideration at the next meeting of the Medical Fellowship Board to be held in September, applications for fellowships in medicine of the National Research Council should be filed by August 1. Applications should be addressed to the secretary of the Medical Fellowship Board, National Research Council, Washington, D. C.

Air Medical Examination Service About Complete.—Following a visit to cities in various sections of the country, Dr. Louis H. Bauer, medical director for aeronautics, U. S. Department of Commerce, stated, July 19, that the organization of the medical service of the aeronautics branch was nearing completion. There are 170 physicians who have been designated as examiners for airplane pilots, and thus officially authorized to perform the special examination. Dr. Bauer was formerly commandant of the army school of aviation medicine at Mitchel Field, New York. He resigned his commission in the army to become medical director of aeronautics for the U. S. Department of Commerce.

Red Cross Ends Flood Emergency Work.—The administrative headquarters of the Red Cross for the Mississippi Valley flood operations was moved, July 12, from New Orleans to the National Headquarters of the American Red Cross in Washington, D. C., a photograph of which is shown here. This marked the passing of the emergency flood period, and the closing of the Red Cross refugee camps which have cared for hundreds of thousands of refugees in the last few weeks. As refugees returned to their homes, the Red Cross assisted them to settle again on their farms, supplying each family with two weeks rations, and feed for stock to tide them over the adjustment period, and providing necessary household equipment and elementary instruction in health, simple furniture, and additional live stock and poultry. Through the Agricultural Finance Corporation, to which Herbert Hoover has given his attention, a form of credit

will also be provided. This is supplementary to the Red Cross rehabilitation. The confidence of the nation in the ability of the Red Cross to carry on in this emergency was shown in part in subscriptions totaling $16,158,107.20. Nearly 600,000 refugees were affected in this emergency relief work, in which the Red Cross cooperated with various other agencies. As the emergency period closed, a thirty day follow-up health program was instituted in each county of the flooded area embracing immunization, purification of water supplies, disposal of sewage, disposal of carcasses of animals, spraying of oil, and screening against mosquitoes. The force organized to carry on this work amounted to 267 physicians, health officers, nurses and sanitarians, many of whom are from the local communities and others from the U. S. Public Health Service. The supplies required for the thirty day program included, among others, 2,480 barrels of spraying oil; 318,180 cans of chlorinated lime; 1,440 barrels of hydrated lime; almost 20 million grains of quinine; 210,750 yards of mosquito netting; 7 tons of dynamite, for use in the burial of



National Headquarters of the American Red Cross.

animals, and about 100,000 mosquito bars which were furnished by the communities themselves in addition to door and window screening. The expenditure of $310,000 was justified in this health program as no serious outbreak of disease occurred in any part of the flooded areas. The incidence of sickness among refugees was actually less than normal in the same areas. The short health program was instituted by the American Red Cross, but carried on with the cooperation of the health departments of the states, the U. S. Public Health Service, the American Medical Association, state and local medical societies and the health departments of fourteen states outside the flooded area.

LATIN AMERICA

Special Hospital for School of Tropical Medicine.—The construction of a special hospital for the School of Tropical Medicine of the University of Porto Rico, under the auspices of Columbia University, New York, was begun, June 1, on the site adjoining that of the laboratory building. It will contain forty-five beds and an outpatient department, and when equipped will cost about $130,000. At the commencement exercises of the University of Porto Rico, June 8, Dr. Juan Iturbe, Caracas, Venezuela, received the honorary degree of doctor of science.

FOREIGN

Personal.—Sir Humphry D. Rolleston, Regius Professor of Physic, Cambridge University, received the honorary degree of doctor in medicine at the summer commencement of the University of Dublin, Ireland.—Dr. Aihiko Sata, formerly president of the Osaka Medical College in Japan, left in May for a lecture tour through Germany as exchange professor at the University of Berlin; his lectures will be on immunization of tuberculosis.—Dr. Masujiro Nishibe, of the laboratory for infectious diseases of the Japan government, and Dr. Shoji Nishio of the Keio University Medical School, Japan, have received fellowships under the Rockefeller Foundation for the year 1927, and will pursue their studies in the United States.

International Society for Microbiology.—At a meeting in Paris, France, in April, presided over by Professor Madsen, the International Society for Microbiology was founded, and at a meeting to be held before the next International Congress for Microbiology in Paris in October, 1928, its constitution and aims will be defined. The society is under the patronage and support of its honorary members, who are MM. Roux, R. Pfeiffer, Kitasato, W. H. Welch, Beyerinch, Wright, Yersin and Winogradsky. About thirty-one scientists from various countries present at the first meeting were designated as foundation members, and they will organize in their respective countries a national committee; each such committee will elect its president and these presidents will become vice presidents of the international society. All existing societies for microbiology may join as foundation members, so that those countries which are not yet represented may organize national committees. Professor Bordet, director of the Pasteur Institute, Bruxelles, was elected president of the society, and Prof. R. Kraus, director, des Serotherapeutischen Institutes Zimmermanngasse, 3, Vienna (IX), is the general secretary.

Deaths in Other Countries

Gustav Fritsch, professor of anatomy and physiology, University of Berlin, aged 89.—**Lew A. Tarrassewitsch,** epidemiologist of Leningrad, committed suicide in Dresden, aged 60.—**Friedrich Luithlen,** dermatologist, Vienna, aged 58.

Government Services

U. S. Public Health Service

Surg. John H. Linson has been relieved from duty in Norfolk, Va., and assigned to U. S. Marine Hospital number 5, Chicago; Surg. Holcombe M. Robertson has been assigned to duty at Ellis Island, N. Y.; Assist. Surg. Gerald T. Sprague to marine hospital number 9, Fort Stanton, New Mexico; Acting Assist. Surg. Robert W. Flynn to marine hospital number 5, Chicago; Acting Assist. Surg. Charles P. Waite, Jr., to duty with the U. S. Bureau of Mines, Washington, D. C.; Surg. Gleason C. Lake, relieved from duty at Washington, D. C., and assigned to duty at U. S. Marine Hospital number 21, Stapleton, N. Y.; Assist. Surg. Kirby K. Bryant, relieved from duty at Stapleton, N. Y., and assigned to duty at Ellis Island, N. Y.

FOREIGN DUTY

Surg. Randolph M. Grimm, U. S. Public Health Service, has been relieved from duty at Washington, D. C., and assigned to duty at Antwerp, Belgium; Assist. Surg. Alfred J. Aselmeyer has been relieved from duty at Washington and assigned to duty at Naples, Italy; Assist. Surg. Raymond A. Vonderlehr has been relieved from duty at Washington and assigned to duty at Cobh, Irish Free State; Surg. William C. Billings has been relieved from duty at New York and assigned to duty at Liverpool, England; Surg. John S. Boggess has been relieved from duty at Detroit, Mich., and assigned to duty, London, England; Surg. Mark V. Ziegler has been relieved from duty at Cobh and assigned to duty at Prague, Czechoslovakia; Passed Assist. Surg. William Y. Hollingsworth has been relieved from duty at Antwerp and assigned to duty at Palermo, Italy; Sr. Surgeon Taliaferro Clark has been directed to proceed from Paris, France, to Berlin, Germany, August 1, and return as chairman of a board; Surg. Leon O. Weldon has been relieved from duty at Liverpool, England, and assigned to duty at Genoa, Italy, and Surg. Dana E. Robinson has been relieved from duty at London, England, and assigned to duty at Naples, Italy.

Veterans' Bureau School of Neuropsychiatry

The postgraduate school in neuropsychiatry, conducted since about March 11 at the U. S. Veterans' Bureau Hospital in New York, is reported to have been a success. About thirty physicians from Veterans' Bureau hospitals throughout the country were in attendance, and the instructors were prominent specialists from Boston and New York. The course was practical and strenuous, including demonstrations, laboratory work and lectures, some of which were given at the New York Psychiatric Institute, Wards Island; some at the medical department of Columbia University College of Physicians and Surgeons, and some at the neurologic institute.

Foreign Letters

LONDON

(From Our Regular Correspondent)

July 9, 1927.

The Treatment of Cancer

At the annual meeting of the Cancer Hospital, Mr. W. Ernest Miles, whose operation for rectal cancer is well known, said that all methods of treatment up to the present could not compare with surgery. The cause of cancer still remained obscure. They had recently been trying the Blair Bell method of lead treatment. So far he had not seen anything that would lead him to think that this treatment would supersede others. Radium treatment on the continent was reported to be securing better results than in this country because larger quantities were used. To carry out similar methods at the Cancer Hospital would require 5 Gm. of radium, at a cost of $275,000.

The Dogs' Protection Bill

The struggle with the antivivisectionists and the antivaccinationists is unending, as they are impervious to scientific evidence. A "dogs' protection bill" is once more before parliament, and once again the British Medical Association and other medical bodies have to take up the defensive. The medical research council (a body appointed by the government), which contains such eminent men as Lord Balfour, Sir Archibald Garrod, Sir Gowland Hopkins, Sir Charles Sherrington and Dr. C. J. Martin, has issued a memorandum declaring unanimously that the bill would place an insuperable barrier across some of the chief paths in medical research for the maintenance of health and diminution of disease and pain. The memorandum, being an official document, has been "presented by the lord president of the council to parliament by command of his majesty." It is important as the most authoritative and up-to-date statement of the reasons for the use of dogs for purposes of research. It points out that the present-day science and art of the physician and surgeon have been founded in large part on the experimental use of dogs. The chief foundations of our knowledge of the processes of digestion, the circulation of the lymph, the work of the heart, and the circulation of the blood have thus been laid. A large part is based on trials made in the feeding of dogs. The work of the surgeon, whether on the brain, the spinal cord, the intestine, or the chest, has been made possible by experiments on dogs. Methods of life saving, as by the transfusion of blood or in the resuscitation of the apparently drowned, have been worked out chiefly on dogs. Important parts of our knowledge of anesthetics and their safe administration, and of the actions of many kinds of drugs, have been gained. There is no physician who does not use in his daily work information which he owes to experiments on dogs. If he is to understand the meaning of such common symptoms as palpitation, breathlessness, giddiness, fainting, and many other forms of distress, if he feels a pulse or listens to the chest, if he transfuses his patient with blood or employs rectal feeding, he is making wholesale use of knowledge derived from experiments on unconscious dogs. Many reasons have made it necessary to use dogs instead of other animals. Considerations of the size are important, and the only animals giving a practicable alternative are the sheep, the pig, the goat or the ape. The dog, unlike these animals, can be kept completely healthy and comfortable in the laboratory and in near association with man. He is not afraid of close and friendly observation. His long domestication has assimilated his natural diet to that of man. Many of his bodily structures provide the nearest approximation among available animals to those of man. The study of diet and the collection and chemical study of the excreta can be carried out readily in the dog, and the results of these are in the main directly applicable to the case of the man or of the child. The actions of drugs and of anesthetics are in the main identical for the dog and the man. There is no ground whatever for the assertion commonly made, that the dog has some special sensitivity to discomfort or pain beyond that of other wild or domestic animals. Indeed, owing to the reasons given in favor of the use of dogs, and on the general humane grounds of avoiding discomfort to animals in captivity, or when receiving an anesthetic for painless experiment, or when under observation, the dog's special habituation to man makes it more desirable than a wild or less domesticated animal. The council then gives examples of recent important researches made by means of experiments on dogs—the discovery that rickets is due to deficiency of vitamin D and the unexpected one that malformations of the teeth are due to the same cause, the effects of alcohol, the study of diseases of the heart and circulation, the discovery of insulin. Finally, experiments have been beneficial to dogs themselves, such as by showing new methods by which they can be protected against distemper and cured of piroplasmosis by trypan blue.

Action Against a Surgeon for Accidentally Removing the Uvula

In Belfast an action was brought against a surgeon for negligence in removing tonsils and adenoids from a girl, aged 6. Damages of $7,500 were claimed. The defendant was a member of the surgical staff of the Ulster Hospital for Women and Children. It was stated that, as the result of the operation the child was unable to take solid food, could not drink in the ordinary way, and at times had a nasal intonation. The evidence showed that the adenoids and the left tonsil were cleanly removed, but the right tonsil was found to be adherent; in the attempt to remove the latter, the uvula was cut off. The surgeon stated that he had performed the operation of removing adenoids and tonsils some 12,000 times and that on this occasion he followed the same procedure and took the same precautions as on other occasions. The removal of the uvula was an accident which had occurred to him only twice in his career and might occur to the best surgeons. He stated that he had given his best skill and attention to the case. In cross-examination he said that he did not know until next morning that the uvula had been removed, and could even now do no more than conjecture the actual moment at which the accident occurred. Negative evidence as to the value of the uvula was given by other surgeons. The jury found that the defendant had exercised reasonable skill and care in the operation, and judgment was given in his favor.

The Color Line in South Africa

According to the Pretoria correspondent of the *British Medical Journal* there are in practice in the Union of South Africa six African Bantu natives, all fully qualified. Being on the registrar, they have the full rights and privileges of physicians. Some of them appear to have large practices among Europeans. In view of the pressing need for medical services in the native territories, this tendency of native physicians to adhere to the towns and practice chiefly among Europeans has caused adverse comment, as state money is spent in assisting native students to qualify in medicine in order to alleviate native suffering. Opposition to the practice of native physicians among Europeans has arisen. Since 1921 a negro physician, Dr. M. I. Molema, has been practicing in Mafeking, and has operated on European and native patients at the Victoria Hospital. From the beginning the nursing staff (composed entirely of Europeans) has resented being obliged to take orders from an African who, dealing with a

white patient. About six months ago its members made a strong protest against Dr. Molema's operating on white patients while they had to assist at the operations and subsequently nurse the cases. As a result he ceased sending in European patients, but recently he again began sending such cases to the hospital. When the third patient, a girl, aged 19 years, arrived, the matron and nurses resigned in a body. The Mafeking Hospital Board, in telegraphing the decision of the staff to the administrator of the Cape Province, stated that it was in sympathy with the nurses. Though the staff has resigned, it is still carrying on the essential nursing services. After its resignation the hospital board again telegraphed to the administrator requesting that a section be added to the hospital ordinance giving hospital boards the right to draw up a list of physicians permitted to treat private patients in the hospital. Dr. Molema is the son of a chief of the Baralong tribe and came originally from Mafeking. He graduated M.B., Ch.B., at Glasgow University in 1919; he served during the war at Stobhill Military Hospital, Dublin, and subsequently at the Dublin Skin and Cancer Hospital. At Dublin he acquired a diploma in midwifery; he spent in all seven years overseas, returning to his native town of Mafeking in 1921. The correspondent states that the outcome of this local trouble is not clear, but it is significant of the growing opposition of the European community to the treatment of white patients, particularly females, by native physicians. It has been pointed out in previous letters that a color line can scarcely be said to exist in England. A number of colored students attend the London hospitals. But the British dominions and colonies, where there is a large colored population, evidently are less liberal.

The Exclusion of Married Women from Appointments

Many municipal bodies refuse to employ married women as physicians in their health services and discharge those who marry while in their employ. More than one motive probably influences them, but the principal one is that they think that a woman who has a husband should not keep a man out of a job. The Medical Women's Federation has just made a strong protest to the Durham County Council, which has recently passed a resolution prohibiting the employment of married women in the county service. The protest is as follows: "The Council of the federation has learned with the deepest regret that Durham Council has decided to debar from employment on its staff all married women, medical and otherwise, whose husbands are in receipt of an adequate income. The new regulation will keep out of sight all possible married candidates, including, it may be, women of exceptional ability and experience, or in regard to whom the handicap of marriage may be comparatively slight; i. e., married women without children, or whose children have reached an age to make little demand on the mother's time. The rule also ignores the fact that in medicine and other professions there are branches where the personal experience gained by marriage and motherhood adds to the value of the worker, as, for instance, in baby welfare work. If economic reasons of this kind are to be considered they ought to be made to apply to men also who possess, for instance, private means or a wealthy wife. This protest is sent because we feel strongly that prohibitive regulations of this kind are grossly unfair to women who have given years of work and devotion to their profession, and also to the public, who are often deprived thereby of the services of tried and skilled workers."

A Decrease of Population

The constantly falling birth rate in the last half century has been frequently described in these letters. It has resulted in a phenomenon only twice previously observed in this country. During the first quarter of the present year there was an absolute decrease of the population of this country. The decrease, it is true, was small, being less than 2,000 persons. The British birth rate has now fallen so low that the margin between births and deaths at any given period of the year is relatively small. An epidemic of influenza, as in the present case, is enough to obliterate this margin. The margin between births and deaths, moreover, is shrinking steadily, for the death rate can scarcely fall much further than it has fallen, whereas the fall of the birth rate continues and still shows a tendency to accelerate. The birth rate for the first quarter of the present year is the lowest ever recorded in any first quarter excepting that of 1919, the year following the complete "mobilization" of the nation for war service. Even three years ago the birth rates, though low, were always higher than the rates recorded in the period of the war. They have now fallen to the "normal" for the war period, and it seems that soon even the extraordinary figures of 1919 will show an excess over the ordinary figures of peace time. Commenting on this decline of population, the *Times* rightly says that it is impossible to disregard its significance, because its effects may well be experienced in the lifetime of the present generation, and goes on to point out the value of recent researches, such as the relation between food and light, which have given a new conception of diet and shown how by simple precautions diet may be made to contribute to resistance against disease and the losses of young life further reduced. This of course is quite true, but the implication that a decline of population can thus be checked misses the significance of the phenomenon surprisingly. The cause is of course economic, and therefore any further reduction of child mortality (which no doubt will occur) can only increase the economic pressure which resists increase of population. Our dense population is maintained by the export of manufactured goods. Their market has been restricted by the consequences of the war and by increased manufacturing abroad but, above all, by increased price largely brought about by state interference (ostensibly humanitarian) in industry and the short-sighted selfishness of trade unionism, which has been allowed too much license by our politicians.

Facilities for Canadian Candidates for the Fellowship of the Royal College of Surgeons

The Royal College of Surgeons and the Canadian Medical Council have under consideration proposals for lessening the cost of the present postgraduate course by Canadians in Great Britain. At present, graduates of Canadian medical colleges who seek to qualify for the fellowship of the Royal College of Surgeons must take both the primary examinations in physiology and anatomy and the finals in clinical subjects in England. It is hoped to arrange for the primary examination to be conducted by British examiners in Canada, leaving only the finals to be taken in England.

Dr. Freeland Barbour

Alexander Hugh Freeland Barbour, M.D., LL.D., F.R.C.P., the writer on gynecologic subjects, has died suddenly and unexpectedly. Born in 1856, he was educated at Edinburgh University. After graduation he studied at Berlin, Paris, Vienna and other centers. He devoted himself to gynecology and became assistant to his brother-in-law, the late Prof. A. R. Simpson, and subsequently gynecologist to the Royal Infirmary of Edinburgh. The "Manual of Gynaecology," written in collaboration with the late Dr. Berry Hart, was distinguished by the rigidly scientific manner in which gynecology was based on anatomic studies and at once became the leading textbook. It ran through many editions and was translated into French, Italian, Spanish and Chinese. Another classic produced by Barbour was his "Atlas of the Sectional Anatomy of Labour."

ITALY

(From Our Regular Correspondent)

May 15, 1927.

Changes in the Red Cross Society

By a recent royal decree, the central committee and the executive council of the Italian Red Cross Society have been abolished. In their stead a special commissioner (Dr. Pio Marta) has been appointed, who will perform the duties that attached to the aforementioned offices, and will also have the power to dismiss from service any member of the personnel of the society.

Scholarships for Women Physicians

The scholarships amounting to $264 in value, which, every year, the Ditta Medicinali Wassermann places at the disposal of the Associazione italiana fra le dottoresse in medicina e chirurgia, were awarded this year to *Dottoressa* Maria Rosso Lanzarini of Bologna, specialist in pediatrics, and *Dottoressa* Emilia Sorrentini of Rome, student of the clinical aspects of labor and social medicine. The committee on award was composed of *Professoressa* Borrino of Turin, *Professoressa* Carcupino of Salsomaggiore, and *Dottoressa* Di Vestea of Pisa.

The Crusade Against Malaria

The Consiglio della società italiana per gli studi sulla malaria, fearing that the people may lose confidence in the alkaloids of cinchona, emphasizes the fact that the alkaloids of cinchona are the only specific remedies thus far discovered for the treatment of malaria. It opposes useless or harmful proprietary preparations.

The government has established in Rome a graduate school of malariology, which will be open from June 15 to October 15. There will be a section in which medical graduates and senior medical students may be enrolled—foreigners as well as Italians—and an economic section intended for engineers and agriculturists.

Hypersusceptibility as a Clinical Problem

Prof. Cesare Frugoni, recently appointed director of clinical medicine at the University of Padua, advances the premise that anaphylaxis is a phenomenon of species; that is to say, it presents shocks that are characteristic for every animal species no matter what the inducing substance may be, and he contends, in agreement with Bastai, that only experiments on man can throw light on the natural human anaphylaxis. Theoretically, anaphylactic reactions may be divided into three types, designated by Duke as local, solitary and general. The general reactions may range from transient malaise to fatal shock. According to Frugoni, such shocks, which may result also from ordinary causes and minimal doses, constitute sometimes the unforeseen cause of death in persons apparently well. The speaker passed in review the principal forms of anaphylactic manifestations involving the skin, the mucous membranes, the abdomen and the joints, and illustrated those least known by drawing on his many personal cases. In closing, he traced a program of study and research for himself and his school.

Sanitary Statistics of the City of Naples

Professor Orsi and Dr. Botti, health officer and registrar, respectively, of Naples, have collected statistics pertaining to the health of their city, which are published in *Avvenire Sanitario*. The population, which in 1876 was 454,948, had increased in 1926 to 803,579, the augmentation being due almost entirely to the excess of births over deaths. The number of marriages contracted each year per thousand inhabitants had fallen from 8.05 during the decade from 1875 to 1884 to 3.78 during the war, but has now attained the average number of 7.5 per thousand, or the rate existing before the war. The births show a decrease. From 36.4 per thousand inhabitants in 1876, the birth rate, after many fluctuations, has dropped to 23.3 (1926). The mortality steadily decreased during the forty years from 1875 to 1914 (from 36.6 per thousand during the first decade of this period to 20.9 during the fourth decade). The mortality reached its highest point in 1918 as a result of the epidemic of influenza, but it began to decrease during the last months of 1919 and has continued to diminish since that time. In 1926 it was 14.6 per thousand. The marked improvement has been due to better hygienic conditions, especially with regard to housing, the crusade against tuberculosis, and the activities of the Opera Nazionale for the protection of mothers and infants. The infant mortality rate in 1875 was 185.2 per thousand births, and in 1926, 135 per thousand; it is evident, however, that in this field there remains much to be done. The curve for tuberculosis mortality is interesting. The mortality rate for pulmonary tuberculosis has dropped from a maximum of 1.86 per thousand population in 1901 to the low level of 0.83 in 1914, after various marked fluctuations and a decline to 0.70 per thousand in 1926.

The mortality rate for nonpulmonary types shows a maximum of 0.93 per thousand in 1901, and a decline to 0.40 per thousand in 1914. Since 1914 the fluctuations have not been marked; the rate for 1926 was 0.32. As the result of isolation of a larger number of patients, a still greater decrease in the mortality can be anticipated in the coming years. The mortality from infectious disease has been so far reduced that it is now around one tenth of the earlier rate. There is, however, an increase in the number of deaths from constitutional diseases, malignant tumors, violence, and senile marasmus.

PARIS

(From Our Regular Correspondent)

June 29, 1927.

The Vital Statistics of France

The statistical service of the ministry of public health and labor has compared the vital statistics for France for the first three months of 1927 with the corresponding period of 1926. The report records a marked decrease in the population:

	1927	1926
Births of living infants	189,575	195,467
Stillbirths	7,551	7,997
Deaths under 1 year	18,987	16,474
Deaths, 1 year and over	202,840	169,902
Total deaths	221,827	186,376
Excess of births over deaths	—32,252	+9,091

In the first quarter of 1927, an excess of deaths over births amounting to 32,252 was recorded, which signifies a corresponding decrease in the population. The number of deaths exceeded those for the previous year by 35,451 and there was a drop of 6,108 in the number of births. To find an adequate explanation for these facts is difficult because no disease has shown any very appreciable recrudescence. The number of marriages shows an increase, while the divorce column is not quite so long, though, to be sure, the effect of these facts on the number of births would not be felt until later. The decrease in the number of births is explained by many as the effect of the increasing burden of taxes occasioned by the war. The increase in the number of deaths is general and affects all the units supplying the statistics, although the public health services have never been better developed than they now are.

Increase in the Number of Paris Hospitals

Following a careful inspection of the hospital services of the Assistance publique, M. Fernand Moriette has concluded that Paris needs two hospitals of one thousand beds each, two hospital-sanatoriums likewise of one thousand beds for tuberculous adults, and two homes for aged men. To

procure the necessary $10,000,000 it has been suggested that the municipality resort to a bond issue.

The Nurses' Pavilion

A number of charity festivals have been held in Paris to obtain funds for the erection of the nurses' pavilion. The pavilion will constitute a combined home and club for nurses who belong to one of the French Red Cross societies. Board, lodging and technical instruction will be available at the pavilion. The volunteer, hastily prepared Red Cross nurse rendered important service during the war, but it is necessary to have a nucleus of nurses who are constantly in training. Therefore, during peace times, the Red Cross maintains sanitary undertakings to serve as fields of practice work for its permanent personnel. The Société de secours aux blessés militaires directs and supports, under the authority of the central office of the Red Cross, an antituberculosis dispensary and school combined, three sanatoriums equipped with 320 beds, a seaside preventorium with seventy beds, and a maternity hospital, with a consultation center on infant care. The regional committees of the Red Cross control, in all, 900 peace-time societies, for the activities of which they expend annually about $160,000. The Union des femmes de France has founded and maintains three infant welfare societies, two "soup kitchens," and fifteen antituberculosis institutions. The Association des dames françaises has established and manages six hospitals or preventoriums, sixty dispensaries, 155 consultation centers on infant care, six day nurseries, twenty-one centers for the free distribution of milk, more than 200 workshops, and eleven vacation colonies and open-air schools. The Association des infirmières-visiteuses de France advances the cause of social hygiene. The mission of the visiting nurse is largely to disseminate health instruction to the public. Wherever their influence has been brought to bear, the good effects have been readily perceived. The Red Cross nurses and the visiting nurses need a place where they can rest, study and recuperate under comfortable and pleasing surroundings. Such a place will be furnished by the Foyer du Square Necker, which will contain 172 rooms. Eighty thousand dollars is still needed to finance the undertaking. The pavilion will be in the name of the Association mutuelle des infirmières, of which Mlle. de Caters is the president.

The Osiris Prize

The Osiris prize, which was established by a wealthy Jewish banker, is made up of two amounts of $4,000 each, one of which is awarded in the field of belles-lettres and the other in the field of science. It is bestowed every five years by a committee of award representing five academies. This year the science prize was awarded to Dr. Charles Nicolle, director of the Pasteur Institute in Tunis, for his researches on exanthematous typhus and recurrent fever and their mode of transmission by parasites; also for his researches on serotherapy in measles and scarlet fever, especially the injection of convalescents' serum.

Dogs Trained in the Army Medical Service

One Sunday recently, in Paris, a number of dogs belonging to the army medical service, which had been trained to scour battle fields in search of wounded men, were led, in parade, by a battalion of the Société des jeunes éclaireurs de France, from the Palais des Tuileries to the Arc-de-Triomphe de l'Etoile. Each dog bore the national banner, on which appeared also his registration number on the records of the ministry of war; his body was encircled by a brassard of the Red Cross Society. At the head of the dogs walked Lux, a veteran of the Morocco campaign of 1919-1921, during which he saved many wounded men who would otherwise doubtless have been abandoned to their fate, and was therefore the object of much public praise. However, the organizers of the parade utilized it as a manifestation against vivisection. Several of the dogs bore placards about their necks on which were such declarations as, "Suppress vivisection." Other placards were not objectionable; such as, "we demand dog hospitals for our aged and infirm comrades that have worn themselves out in service to man," "Kill dogs at birth rather than abandon them in their old age," "Kindness to animals is one of the first evidences of a superior nature in man." Women representatives of the propagandists accompanied the parade and stopped from time to time and delivered short speeches to the groups of onlookers on the subject of kindness to animals. In conclusion, a lecture on the psychology of animals was given at the Jardin zoologique.

An American Gift to the University of Paris

The rector of the Académie de Paris has been authorized by President Doumergue to accept the gift which has been made to the University of Paris by Dr. Gage, an American citizen, acting in the name of the American Dormitory Committee at the Cité Universitaire, and which consists of a building to be erected on the parcel of land owned by the University of Paris, boulevard Jourdan. The building, which is estimated to cost $200,000, will be used as a dormitory by students from the United States studying in Paris at any of the institutions of higher instruction. The privilege may be accorded likewise, under certain conditions of reciprocity, to French students, as well as to professors and scholars of American nationality.

Intestinal Occlusion Following Appendectomy

The Société de chirurgie recently discussed intestinal occlusion following appendectomy. M. Vonckeп of Liége treats primary occlusions by laparotomy followed by Mikulicz drainage, and after exploration of the ileocecal region he breaks up secondary or tardy occlusions that are due to adhesions. M. Chifoliau believes that the usual causes of such occlusion are adhesions which cause intestinal kinks or mere cohesion of the intestinal loops but rarely a stenosis. A spontaneous fistula often constitutes a relatively favorable solution. Voncken, using local anesthesia, intentionally produced a fistula in seven cases (four times on the cecum and three times on the small intestine) with successful results in six cases. M. Cunéo made a distinction between late occlusions, which should be treated by the destruction of adhesions and the liberation of the intestine, and occlusions that develop immediately following an operation, in which the operator must be content with an emergency intervention that has a minimum of risk; namely, fistulization.

Antidiphtheritic Serotherapy in Bronchopneumonia in Children

Having observed that bronchopneumonia is often aggravated by the presence of the diphtheria bacillus, which makes its appearance after the onset of the disease, M. Duchon gives every bronchopneumonia patient, as soon as he is admitted to the hospital, and before the bacteriologic examination of the nasal mucus is made, an injection of from 200 to 250 cc. of antidiphtheritic serum. This makes the terrain, in advance, resistant to the diphtheria toxin in case the diphtheria bacillus appears later. He employs, furthermore, the same prophylaxis in all grave measles cases. M. Apert stated that the mortality is 66 per cent when the injection of serum is not made until after the establishment of the presence of the diphtheria bacillus and that the mortality drops to 27 per cent when prophylactic injections of serum are given before the bacteriologic examination. Guillemot and Grenet, in communicating to the Société médicale des hôpitaux their statistics for Bretonneau Hospital for the first six months of the

year, during which the Duchon method has been systematically employed in all cases of bronchopneumonia, report, in sixty-eight cases, twenty-nine deaths, eighteen of which occurred during the first forty-eight hours. There remain, still, fifty patients who were regularly treated, with eleven deaths, or a mortality of less than 25 per cent. In children up to 2 years of age there were twenty-seven cases with eight deaths, or a mortality less than 33 per cent, and in children over 2 years of age there were twenty-three cases with three deaths.

GENEVA

(From Our Regular Correspondent)

June 6, 1927.

Treatment of Syphilis

In a recent lecture delivered to the Medical Society of Geneva on the "Present Treatment of Syphilis," Prof. Charles Du Bois said that syphilis can be cured, the proof of which is that today cases of reinfection are not infrequent. On the other hand, a cure is difficult to obtain. Certain medicaments are so effective that they deceive the patient as well as the physician by too rapid disappearance of all evidences of the morbid process and in this fact lies the danger. Biologic reactions are of great value if properly interpreted, but only too frequently they are misinterpreted. Every case of syphilis must be regarded as a severe case and treated as such. Experimental work is of great value, but the fact must not be lost sight of that animals present a virgin soil while man has ancestral immunity. Hence the first principle in treatment is to give sufficient doses of the drug selected whether or not clinical and laboratory evidences disappear. Fournier's treatment lasted four years, given at stated intervals, and his results were unquestionably good, but unfortunately 75 per cent of the patients carried it out for not more than two years, some for even less.

Asystolia

In a recent lecture on the therapeutics of asystolia, delivered to the Geneva Medical Society, Prof. Maurice Roch stated that, generally speaking, the treatment of the asystolia is more important than that of the lesion giving rise to it. A distinction is to be made between asystolia of the auricles and the right and left ventricle. Auricular asystolia presents complete arrhythmia, fibrillation and flutter. Quinine and especially quinidine improve the rhythm but have less influence on the patient's general condition. The latter drug is a depressor of the cardiac tone.

Asystolia of the left ventricle is made evident by pain, cardiac distress and edema. It is ameliorated by bloodletting.

Asystolia of the right ventricle gives rise to edema, cyanosis, dyspnea and oliguria. In point of fact, said the lecturer, vicious circles become established in the heart, nervous system, lungs, liver and kidneys, and they must be broken at any cost. Rest is essential but often difficult to enforce. Morphine is very useful. These patients micturate more during the night than during the day, and sleep facilitates that renal function. Combinations of morphine with barbital, which is a diuretic, or codeine are often excellent. Cupping, leeches, puncture and diuretics should precede the exhibition of cardiac stimulants, which, occasionally, will not afterward be found necessary.

Digitalis is the prince of cardiac tonics but must be exhibited in sufficient doses. The lecturer then remarked that the myocardium possesses five properties: (1) excitation (2) excitability (reception of excitation); (3) conductivity (transmission of excitation); (4) contractibility (response to excitation), and (5) tone. Digitalis increases 1, 2, 4 and 5, while it decreases 3. It slows the pulse. The increase of excitability is delicate and is governed by contraindications, so that much prudence is required when there is a pulsus bigeminus. These various diagnostic elements have been brought to light by the electrocardiograph.

Among the substitutes for digitalis, ouabain is one of the most interesting.

Pharmacist Sentenced

The police court of the city of Berne has sentenced a pharmacist to pay 25 francs ($5) for illegal practice of medicine. He not only examined the urine of his clients but also made clinical examinations, passing himself off as "doctor." Two unfortunate clinical results at length brought this pseudocolleague to the courts. The first case was that of a girl, aged 15, who was suffering from some lesion of the knee joint. The "doctor" made a diagnosis of "softening of the bones" and thereupon prescribed an infusion, a solution for baths, some oatmeal for making soup, and camphorated oil for friction rubs. The consultation and remedies cost 18 francs ($4.60). But, since improvement was not forthcoming, the patient's mother sought out the city school physician, who found advanced tuberculosis of the knee joint. The second case was that of a man suffering from asthma and edema, from whom the pharmacist prescribed a powder and a lotion for frictions. Admitted to a hospital a few days later, this patient died.

BUENOS AIRES

(From Our Regular Correspondent)

May 31, 1927.

Infant Welfare Meeting

At the sixth meeting of the assembly of the League of Nations, the public health section was charged with the duty of organizing meetings of infant welfare experts. The first of these meetings was held at Geneva, and the second will take place at Montevideo, June 6. This will be the first official act of the League of Nations in South America. The medical, public health and social aspects of the problem will be discussed and statistics submitted. Prevention of scarlet fever, measles, diphtheria, whooping cough and tuberculosis will be stressed. An attempt will be made to standardize infant morbidity and mortality records. The health section of the League of Nations will be represented by Drs. Madsen (Denmark); Rajchman (Poland); Saiki (Japan), and Aráoz Alfaro (Argentina). In addition, Morquio (Uruguay) and Fernández Figueira (Rio de Janeiro) will help in arranging the program. Argentina, Bolivia, Brazil, Chile, Paraguay and Uruguay will be represented by official delegates.

Treatment of Tuberculosis of the Joints

The Argentine Surgical Society has begun a symposium on the methods and results of the Robertson Lavalle treatment of tuberculosis of the joints (THE JOURNAL, March 20, 1926, p. 916; May 15, 1926, p. 1587; Jan. 15, 1927, p. 185). The first statistics and reports, submitted by Zeno, Tamini and Zorraquin, contain some instances of aggravation and many failures. These reports and discussions will continue throughout the year.

Maternity Care

The Buenos Aires Public Assistance has organized a visiting midwife service for poor women wishing to remain at home during labor. This service assisted 15,800 patients at its stations and 5,130 at home during 1926. There are also quite a number of well equipped maternity hospitals, and the midwives are beginning to complain of too much competition.

Pan American Tuberculosis Congress

October 16, the Pan American Congress on Tuberculosis will begin its sessions at Córdoba. A number of American countries, such as Brazil and Uruguay, have already

appointed delegates. Several European countries will also send specialists, including Sauerbruch of Germany, Sayé of Spain, and Boquet and Nègre of France.

Tribute to Professor Cabred

While joining in the universal tributes to the prominent French psychiatrist, Pinel, the National Academy of Medicine decided to honor likewise an Argentinian, Prof. Domingo Cabred. Dr. Cabred was the founder of the chair of psychiatrics in the Bueonos Aires medical school. His tireless efforts also succeeded in bringing about the construction of the present large hospitals for the insane, such as Las Mercedes, Open Door and Oliva, as well as the establishment of many homes and hospitals in the various provinces. The committee in charge of the arrangements for the celebrations includes Professors Llambias, Castex and Herrera Vegas of the National Academy of Medicine, and Professors Rojas, Valle and Houssay of the Buenos Aires Medical School.

Foreign Visitors

Professor Ombredanne of Paris is on his way to this country to give an exchange course.——The Córdoba medical school has appointed Prof. Jiménez de Azua (Zaragoza) director of a newly created hematologic institute.——Prof. A. Herlitzka (Turin) has also announced his arrival in the near future.

BERLIN

(From Our Regular Correspondent)

June 25, 1927.

The Increase of Crime Due to Greater Consumption of Alcoholic Beverages

According to recent reports of the Federal Bureau of Statistics, the number of convictions for serious cases of assault and battery have increased of late by one eighth, and fines for minor injuries coming under the same head have been augmented by one fifth. According to statements of the same federal bureau, the condition is evidently due, in part, to the increased consumption of alcohol, since the beer consumption of 1925, in contrast with 1924, was increased from 34,650,000 hectoliters to 46,220,000 hectoliters, or from 56.1 liters to 73.9 liters per unit of population, while the use of brandy increased from 433,500 hectoliters to 557,000 hectoliters, or from 0.7 liter to 0.9 liter per unit of population. In Bavaria, the number of persons sentenced for crimes and misdemeanors committed in contravention of federal laws, while intoxicated, was increased in 1925 by one third and in 1926 by three fifths over the record for 1924. Bodily injuries occupy first place and insult and resistance to an officer, second place.

Chronic Mercurial Poisoning and the Menace of Amalgam

In an address before the Bonner Gesellschaft für Natur- und Heilkunde, May 9, 1927, the pharmacologist Professor Führer discussed the articles by the chemist Alfred Stock, reported in a previous letter, on the danger of murcury vaporizations. Stock has asserted that amalgam fillings of teeth may cause chronic mercurial poisoning. The existing literature gives the impression that, with the elimination of a few hundredths of a milligram of mercury in the daily urine output no signs of chronic poisoning have been observed, but that, with the excretion of a few tenths of a milligram, such signs have appeared. From silver amalgam fillings it would be rare for mercury in the aforementioned quantities to appear in the urine. If such quantities are found, they are more likely due to metal that has become dissolved than to vaporizations from fillings in the mouth of the patient. It is the task of the dentist so to instruct his patients in mouth hygiene and proper diet that resorption from amalgam fillings will be prevented. The use of unstable copper amalgam should be abandoned. The optimal mercury content of silver amalgam should not be exceeded. Under proper conditions (no contact with gold or other metals, no exceedingly large amalgam surfaces) the use of silver amalgam fillings appears to be safe. During the discussion that followed the address, Prof. E. Hoffmann stated that, in evidence of the toxic effect of mercury-containing fillings, he had failed to find, as local proof, chronic ulcerous gingivitis traceable to the filling. He admitted having seen occasionally a local gingivitis associated with copper amalgam fillings, but said that the causal relation could not be established with certainty by demonstrating the presence of mercury in the tissues and was therefore not recognized or accepted in the dental clinic. With reference to acquired hypersusceptibility, he called attention to the recent observations of Bloch, according to which, any person, if a large enough dose is administered, can be made hypersensitive to synthetically produced primrose poisoning, and referred also to the belief that pulmonary and pleural cancers, of which the incidence is greater in physicians than in other subjects, may possibly be caused by the inspiration of tar and similar irritating substances over a long period of years.

Publicity Campaigns to Teach Hygiene

At a recent session, the federal committee for the instruction of the people in hygiene decided on methods of disseminating knowledge of hygiene in rural regions. It will direct its first attention to the abatement of the fly nuisance in the plain country. This will be a crusade against all types of vermin, since the problem is associated with the hygiene of stables, houses and foodstuffs. It is hoped consequently that progress may be made against typhoid, tuberculosis and other epidemics. For this purpose *kreiszentrale,* or township centers, are to be instituted, to be supervised by the township or communal physician, who will be supported by the trustees, physicians, teachers, pastors and the health insurance officials. In this manner, it is thought that suitable material for instruction purposes will be procured and that interest among influential groups will be promoted. In furtherance of the publicity campaign, leaflets, pamphlets, lectures with lantern slides, postcards and placards, but, more particularly, professional instruction in the schools, will be employed. The teachers will be urged to assign to pupils hygienic subjects for theme writing; the pastors will be expected, at the conclusion of their sermons, to call attention to health movements; in the show-windows of appropriate shops the "weapons of war" to be used in the fly elimination campaign will be displayed, and the public press and the radio will also be brought into service. The war on flies will be prosecuted chiefly from the middle of May to the end of June. The expenses will be met (at least in part) by the sale of "fly campaign postcards" and by funds procured through sporting events.

Marriages

Edward Nicholas De Witt, Bridgeport, Conn., to Miss Kathryn Lois Gipple of Alden, N. Y., June 13.

Clairmount Arthur Kressley, Sellersville, Pa., to Miss Harriet Louise Kipp of Allentown, June 23.

William S. Kiskadden, El Centro, Calif., to Miss Lael Irene Moore of San Diego, July 15.

John A. Powers, Warrensburg, Mo., to Miss Alice G. McIntyre of Windsor, June 25.

Clayton C. E. Carson to Miss Blair Thompson, both of Gassaway, W. Va., May 29.

Deaths

Henry Mills Hurd ✠ Baltimore; University of Michigan Medical School, Ann Arbor, 1865; emeritus professor of psychiatry, Johns Hopkins University School of Medicine; member of the American Psychiatric Association, the Association of American Physicians and the Maryland State Lunacy Commission; past president of the American Academy of Medicine, the American Hospital Association and past president and secretary of the American Medico-Psychological Association; superintendent of the Eastern Michigan Asylum, Pontiac, 1878-1889, and first superintendent of Johns Hopkins Hospital, 1889-1911, editor of the hospital bulletin and reports, 1890-1911, and since 1911 secretary of the board of trustees; editor of the *Modern Hospital*, 1913-1920; co-editor of "Hospital, Dispensaries and Nursing"; editor emeritus of the *American Journal of Insanity* and editor of the "Institutional Care of the Insane in the United States and Canada"; aged 84; died, July 19, at his summer home in Ventnor, N. J., of pneumonia.

Antonio Stella ✠ New York; University of Naples, Italy, 1893; on the staffs of the Manhattan State, the Italian and Columbus hospitals; New York State examiner in lunacy; delegate of the Italian government to the Sixth International Tuberculosis Congress, Washington, D. C., 1909; delegate of the U. S. Government to the Seventh International Tuberculosis Congress, Rome, 1912; honorary commissioner of the U. S. Government to the International Expedition of Commerce and Labor, Turin, 1912; decorated Chevalier of the Crown of Italy in 1910; author of "Some Aspects of Italian Immigration to the United States"; aged 58; died, July 3, at the New York Post-Graduate Hospital, of septicemia, following an operation on an abscess.

John George Williams ✠ Brooklyn; Yale University School of Medicine, New Haven, 1900; member of the American Roentgen Ray Society and the Radiological Society of North America; on the staffs of the Hospital of the Holy Family, St. Mary's, Brooklyn, St. Peter's and St. Charles hospitals; and formerly on the staffs of the Swedish, St. Catherine's and Methodist Episcopal hospitals; aged 54; died, July 2, of chronic endocarditis and mitral stenosis.

James Mortimer Keniston, Portland, Maine; Harvard University Medical School, 1871; member of the Connecticut State Medical Society and the New England Society of Psychiatry; superintendent of the Hartford (Conn.) Hospital, 1904-1906 and since 1906 on the staff of the Connecticut Hospital for the Insane, Middletown; author of "Paranoia" and "Kingdom of the Mind"; aged 78; died, July 13, of diabetes mellitus and chronic myocarditis.

William Hinton Wilder ✠ Birmingham, Ala.; Medical Department of the University of the City of New York, 1891; past president of the Jefferson County Medical Society; formerly professor of materia medica and therapeutics, Birmingham Medical College; on the staff of St. Vincent's Hospital, where he died, June 30, of chronic myocarditis, aged 64.

Daniel William Finlayson, Des Moines; University of Michigan Medical School, Ann Arbor, 1875; Bellevue Hospital Medical College, New York, 1880; formerly professor of surgical anatomy and surgical diseases of the rectum and genito-urinary organs at Drake University College of Medicine; aged 80; died, July 11, of heart disease.

Daniel Strock ✠ Camden, N. J.; Jefferson Medical College of Philadelphia, 1877; past president of the Medical Society of the State of New Jersey, and past president and secretary of the Camden County Medical Society; on the staff of the Cooper Hospital; aged 75; died, July 10, of cerebral hemorrhage.

Charles Murray Dunning ✠ Franklin, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1899; for several years president of the board of health of Franklin; aged 54; died, July 4, at a hospital in New York, following an operation for gallstones and appendicitis.

Frank Emmett Downs, Toledo, Ohio; University of Pennsylvania School of Medicine, Philadelphia, 1918; member of the Ohio State Medical Association; formerly on the staff of the Mercy Hospital; aged 33; died, July 9, at Oakland, Calif., following an operation for appendicitis.

Joseph Packard Laird ✠ Miami, Fla.; George Washington University Medical School, Washington, D. C., 1902; served during the World War; aged 50; died, July 7, of heart disease, on the steamship *Cameronia*, while en route to Glasgow, Scotland.

Paul F. Robinson, Indianapolis; Medical College of Indiana, Indianapolis, 1905; member of the Indiana State Medical Association; county coroner; aged 48; died, June 29, at the City Hospital, of injuries received in an automobile accident.

Roscoe Lee Hamilton, Matador, Texas; University of Tennessee College of Medicine, Memphis, 1908; served during the World War; aged 49; died, June 15, at a hospital in Fort Bayard, N. M., of chronic pulmonary tuberculosis.

Enoch George Best ✠ Greenfield, Mass.; Medical Department of the University of the City of New York, 1882; formerly on the staff of the Franklin County Hospital, where he died, July 3, aged 76, of dilatation of the heart.

Harry Earl Brailey ✠ Swanton, Ohio; Detroit College of Medicine and Surgery, 1902; past president of the Fulton County Medical Society; aged 49; died, July 3, at a hospital in Toledo, following an operation for sinusitis.

William J. Blewett, Chicago; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1890; member of the Illinois State Medical Society; aged 68; died, July 8, at the Oak Park (Ill.) Hospital, of heart disease.

Lamert Oulton ✠ Providence, R. I.; Tufts College Medical School, Boston, 1911; on the staffs of the Memorial Hospital, Pawtucket, and the Homeopathic Hospital, Providence; aged 45; died, July 6, of pulmonary tuberculosis.

Willis M. Wilson, Norfolk, Neb.; Keokuk (Iowa) Medical College, 1891; member of the state senate for two years; on the staff of the Norfolk State Hospital for eight years; aged 67; died, May 15, of cerebral hemorrhage.

Evelyn Scott Moore, Akron, Ohio; University of Michigan Homeopathic Medical School, Ann Arbor, 1901; aged 53; died, July 2, as the result of injuries received in an automobile accident several years ago.

Irving Alexander, Sunmount, N. Y.; Middlesex College of Medicine and Surgery, Cambridge, Mass., 1926; aged 27; died, February 13, at the U. S. Veterans' Hospital, number 96, of chronic pulmonary tuberculosis.

George Pope Meecham, Eldred, Pa.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1891; aged 67; died, July 5, at Olean (N. Y.) General Hospital, of carcinoma of the liver and diabetes mellitus.

Daniel A. J. Bell, McCormick, S. C.; University of Georgia Medical Department, Augusta, 1889; member of the South Carolina Medical Association; aged 67; died, June 27, of myocarditis and nephritis.

John F. Williams ✠ Evansville, Ind.; Chicago Medical College, 1865; member of the Illinois State Medical Society; aged 90; died, July 6, at the Walker Hospital, of carcinoma of the pleural cavity.

John G. Kelly, Hornell, N. Y.; University of Buffalo School of Medicine, 1884; formerly on the staff of St. James Mercy Hospital; aged 70; died, June 20, at the Strong Memorial Hospital, Rochester.

Andrew H. Hise, Carrollton, Ohio; Columbus Medical College, 1879; formerly mayor of Carrollton; aged 76; died, July 1, at the Aultman Hospital, Canton, of cerebral hemorrhage.

James R. Kingsley ✠ Three Rivers, Mich.; University of Michigan Medical School, Ann Arbor, 1897; on the staff of the City Hospital; aged 58; died, June 30, of cerebral hemorrhage.

Myron Lemuel Chandler ✠ Barre, Vt.; University of Vermont College of Medicine, Burlington, 1891; on the staff of the Barre City Hospital; aged 63; died, July 14, of heart disease.

William Ketchum Jacobs, Brooklyn; Columbia University College of Physicians and Surgeons, New York, 1899; aged 49; died, June 17, of hypertension and cerebral hemorrhage.

W. L. Stierwalt ✠ Fremont, Ohio; Toledo Medical College, 1888; on the staff of the Memorial Hospital of Sandusky County; aged 68; died, July 1, of chronic nephritis and uremia.

Lewis D. Brumm ✠ Celina, Ohio; Physio-Medical Institute, Cincinnati, 1882; aged 66; died, July 4, at a hospital in Lima, following an operation for a malignant tumor of the kidney.

John Z. Lawshe, Atlanta, Ga.; New York Homeopathic Medical College, New York, 1883; aged 70; died, July 5, as the result of a cerebral hemorrhage suffered sometime ago.

James Arthur Campbell, New York; University of Dublin, Ireland, 1889; aged 67; died, June 24, at the New York Hospital, of toxemia following an operation for gallstones.

John F. Randolph, Fayette, Ala.; Memphis Hospital Medical College, 1898; member of the Medical Association of the State of Alabama; aged 50; was found dead, May 8.

Robert Rees Sinclair ✠ Westfield, N. J.; Medical Department of the University of the City of New York, 1894; aged 53; died, July 11, of carcinoma of the gallbladder.

Alexander Gordon Graybiel ✠ Caledonia, Mich.; Detroit College of Medicine and Surgery, 1887; aged 70; died, June 29, of cerebral hemorrhage and pneumonia.

James William Redmond ✠ Boston; Harvard University Medical School, Boston, 1892; aged 60; died, July 7, of coronary thrombosis and chronic myocarditis.

Alexander C. Whitehill, Brooksville, Pa.; Keokuk Medical College, College of Physicians and Surgeons, 1905; aged 55; died suddenly, July 4, of heart disease.

Eli Otis Cherry ✠ Newbern, Tenn.; Medical Department of the Tulane University of Louisiana, New Orleans, 1885; aged 66; died, May 21, of myocarditis.

Charles Wilford Camp ✠ Canaan, Conn.; Medical Department of the University of the City of New York, 1875; aged 78; died, June 10, of heart disease.

Hugh Rutledge Tison, Allendale, S. C.; University of Georgia Medical Department, Augusta, 1904; aged 45; died, June 30, of chronic myocarditis.

William F. Boyers ✠ Fairmont, W. Va.; Barnes Medical College, St. Louis, 1896; on the staff of the Cook Hospital; aged 55; died suddenly, July 2.

Eugenia Margaret Culver, Glencoe, Ill.; Illinois Medical College, Chicago, 1901; aged 59; died, July 17, at a hospital in Evanston, of heart disease.

Ephraim Franz Hoffmann, New York; University of Vienna, Austria, 1888; aged 65; died, July 9, of coronary arteriosclerosis and thrombosis.

Byron Frame Dunkin, Louisville, Ky.; University of Louisville School of Medicine, 1922; aged 30; died, July 4, of pulmonary tuberculosis.

Ralph L. Bentley, Lincoln, Neb.; Bennett College of Medicine and Surgery, Chicago, 1881; aged 72; died, June 5, of valvular heart disease.

Samuel B. Sheldon, Columbus, Ohio; Miami Medical College, Cincinnati, 1869; Civil War veteran; aged 84; died, June 30, of paralysis.

Charles Henry Bennum, Georgetown, Del.; Medico-Chirurgical College of Philadelphia, 1892; aged 60; died, June 20, of nephritis.

James McConnell Harrison, Hattiesburg, Miss.; Atlanta (Ga.) Medical College, 1880; aged 71; died, June 21, of chronic myocarditis.

William Kirksey Freeman, Denning, Texas; Barnes Medical College, St. Louis, 1899; aged 55; died, June 7, of heart disease and uremia.

Emma Jane West, Manistee, Mich.; Hahnemann Medical College and Hospital, Chicago, 1899; aged 70; died, July 5, of arteriosclerosis.

William Hellman Rosenau ✠ Banning, Calif.; Johns Hopkins University School of Medicine, Baltimore, 1921; aged 29; died, June 21.

Augustus J. Woodward, Cincinnati; Miami Medical College, Cincinnati, 1875; aged 75; died, July 7, of mitral regurgitation.

John B. Miller, Tina, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1873; aged 74; died, June 30, of myocarditis.

Ernest Arthur Markham, Durham, Conn.; Eclectic Medical College of the City of New York, 1877; aged 73; died, May 22.

Harvey Voyles, Bedford, Ind.; University of Louisville School of Medicine, 1877; aged 78; died, July 2, of heart disease.

Hubert Fairleigh Dunn, Chicago; University of Munich, Germany, 1914; aged 39; died, July 4, of acute appendicitis.

Clyde Wheeler Hodges ✠ Akron, Ohio; Medical College of Ohio, Cincinnati, 1901; aged 48; died, July 13, of diabetes.

Julia C. Starr, Beatrice, Neb. (licensed, Nebraska, year unknown); died, June 15, following a long illness.

Peter Macdougall, Waukau, Wis.; National Medical University, Chicago, 1898; aged 76; died, June 10.

Charles S. Taylor, Los Angeles; Chicago Medical College, 1875; aged 76; died, June 10.

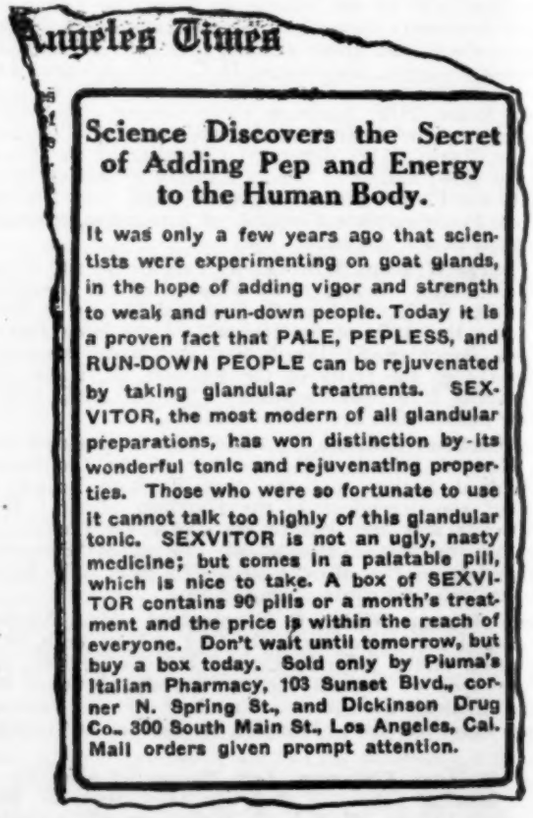
The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

MORE MISBRANDED NOSTRUMS

Abstracts of Notices of Judgment Issued by the Bureau of Chemistry of the United States Department of Agriculture

Sexvitor.—Joseph A. Piuma of Los Angeles, California, shipped in June, 1926, a quantity of "Sexvitor," which was misbranded in violation of the Food and Drugs Act. When analyzed by the Bureau of Chemistry, the Sexvitor Tablets were found to consist essentially of strychnine, a phosphorus compound, a laxative plant drug extract, and some animal matter. The preparation was sold under the fraudulent claim


Angeles Times

Science Discovers the Secret of Adding Pep and Energy to the Human Body.

It was only a few years ago that scientists were experimenting on goat glands, in the hope of adding vigor and strength to weak and run-down people. Today it is a proven fact that PALE, PEPLESS, and RUN-DOWN PEOPLE can be rejuvenated by taking glandular treatments. SEXVITOR, the most modern of all glandular preparations, has won distinction by its wonderful tonic and rejuvenating properties. Those who were so fortunate to use it cannot talk too highly of this glandular tonic. SEXVITOR is not an ugly, nasty medicine; but comes in a palatable pill, which is nice to take. A box of SEXVITOR contains 90 pills or a month's treatment and the price is within the reach of everyone. Don't wait until tomorrow, but buy a box today. Sold only by Piuma's Italian Pharmacy, 103 Sunset Blvd., corner N. Spring St., and Dickinson Drug Co., 300 South Main St., Los Angeles, Cal. Mail orders given prompt attention.

that it was a superior glandular tonic for men and women, that it would increase energy, enrich the blood, and act "as a vitalizer for pale and pepless people." In December, 1926, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 14805; Issued May, 1927. Chem. Suppl. 227.*]

Rider's Eucalyptus Oil Compound.—The Dr. G. H. Rider Company, San Diego, California, shipped in July and September, 1926, from California to Texas a quantity of "Dr. Rider's Eucalyptus Oil Compound," which the federal authorities declared was misbranded. When analyzed by the Bureau of Chemistry, the stuff was found to be essentially petroleum oil flavored with sassafras. It was sold as a remedy for a long list of ailments, including rheumatism, toothache, croup, epileptic fits, deafness, paralysis, appendicitis, gallstones, bedwetting, irregular menses, spinal meningitis and pneumonia. In December, 1926, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 14806; Issued May, 1927. Chem. Suppl. 227.*]

Moore's Liver-Ax.—The Mount Grove Grocery Company, Mount Grove, Missouri, shipped in February, 1926, to Chicago a quantity of "Moore's Liver-Ax," which the federal authorities declared was misbranded. When analyzed by the Bureau of Chemistry, the preparation was found to be an extract of laxative plant drugs in a mixture of water and alcohol. The therapeutic claims made for the product were false and fraudulent and, in November, 1926, judgment of condemnation and forfeiture was entered, and the court ordered that the product be destroyed.—[*Notice of Judgment 14730; Issued April, 1927. Chem. Suppl. 225.*]

Genitol.—Brewer and Company, Inc., Worcester, Massachusetts, shipped in March, 1926, from Massachusetts to Porto Rico a quantity of "Genitol," which was declared misbranded. When analyzed by the Bureau of Chemistry, Genitol was found to contain 18 per cent alcohol, about 2 per cent mineral matter, sugar and glycerin. It was falsely and fraudulently claimed to be an ovarian and uterine tonic and a remedy for amenorrhea, dysmenorrhea, sterility, habitual abortion, and various other conditions. In November, 1926, judgment of condemnation and forfeiture was entered, and the court ordered that the product be destroyed.—[*Notice of Judgment 14789; Issued April, 1927. Chem. Suppl. 226.*]

Nervo-Vital.—A quantity of "Nervo-Vital" was shipped in interstate commerce in March, 1926, by Brewer and Company, Inc., Worcester, Massachusetts, and the product was declared misbranded by federal officials. When analyzed in the Bureau of Chemistry, Nervo-Vital was found to consist of alcohol, glycerin, sugar, mineral matter, and a small amount of strychnine and nitrogenous matter, together with some water. The product was falsely and fraudulently labeled as a remedy or cure for hysteria, sexual debility, nervous prostration, neurasthenia, and various other conditions. In December, 1926, judgment of condemnation and forfeiture was entered and the court ordered that the product be destroyed.—[*Notice of Judgment 14789; Issued April, 1927. Chem. Suppl. 226.*]

Correspondence

EXOPHTHALMIC GOITER

To the Editor:—In the interesting and instructive article of Drs. Hyman and Kessel on exophthalmic goiter (THE JOURNAL, June 25) occurs the statement that "McCarrison and Marine and others who have worked in goiter belts have carefully noted that exophthalmic goiter is no more common in these districts, and seems not to be influenced by the presence of endemic goiter."

That there may be no misunderstanding as to what is meant by exophthalmic goiter, I quote the diagnostic symptoms as laid down in the article by Drs. Hyman and Kessel. "True exophthalmic goiter is characterized usually by exophthalmos, goiter, tremor, tachycardia and an elevation of the basal metabolic rate. Of these symptoms the tachycardia and the elevation of the basal metabolic rate alone are constant." The conclusion that the frequency of exophthalmic goiter or toxic adenoma as thus defined bears no relation to the frequency of simple goiter in a community or state is contrary to my observation on this subject. One of the arguments used by our committee for the prevention of goiter in Kentucky will lessen the frequency of toxic goiter; that is, goiter presenting the symptoms mentioned above.

If there is no relation between the number of cases of simple goiter and exophthalmic goiter in the same territory, then exophthalmic goiter should occur as frequently in a state where simple goiter is infrequent as where it is a common malady, as in goiter belts.

I am under the impression that exophthalmic goiter is far more frequent in northern Ohio and Michigan, for example, where simple goiter is very prevalent, than in the states of Mississippi and Louisiana, where simple goiter is relatively infrequent.

Some two years ago, in the investigation of the relationship of endemic and simple goiter with exophthalmic and toxic adenoma, I was forced to the conclusion that the frequency of the former influenced the prevalence of the latter and that exophthalmic goiter and toxic adenoma were often subsequent to the nonsymptomatic goiter. At that time Dr. Ramsey of the department of health of Michigan wrote me, "Exophthalmic goiter is more frequent in regions where simple goiter is endemic." Also Dr. Mayhurst of the department of health of Ohio points out the unanswerable argument that in defects found in drafted men, exophthalmic goiter was more prevalent in the districts where simple goiter reached its highest incidence.

RICHARD R. ELMORE, M.D., Louisville, Ky.

EDUCATION OF THE PUBLIC IN HEALTH

To the Editor:—May I offer a different point of view of the subject of the education of the public in medicine and in health, discussed respectively in THE JOURNAL, June 11, and in *Hygeia* for July? Both editorials referred to the "peculiar notion" of one newspaper health columnist as to what constitutes good exercise. As I acknowledge the "somersaulting mania" I beg to correct the editorial misunderstanding about that. I have never so intimated, nor even admitted, but have often insisted in my column that somersaulting is *not* exercise.

Both articles commented on the "strange notion that disease is entirely a matter of the infecting organism and the individual's natural resistance to disease and that factors which may lessen his natural immunity have little or nothing to do with the case." I acknowledge paternity of this strange notion, too. But I submit that the editorial states the thought clumsily. If there are any factors which may lessen immunity I shall be eager to publish the news to the newspaper reading public the instant medical science determines what these factors are, and at the same time I shall publicly acknowledge that my strange notion was wrong.

A third point in these editorials seemed just as inconsistent. It was the suggestion that all medical or health matter published to the laity by members of the organized profession should be under the control of organized medicine. Such control would prevent the devotion of health columns to personal opinions or "impropaganda" and insure the presentation to the public of the consensus of opinion of the medical profession. I fancy the health columnist who tried to present the consensus of medical opinion about the question of the use of iodine to supply the deficiency of ordinary diet and water in that element would find himself about now turning somersaults or flip-flops trying to keep in tune with the consensus. The consensus of medical opinion is about as tangible as the average man.

The attempt to determine the consensus of the profession on a given question is one of the most serious responsibilities of the newspaper health columnist. How shall he decide when opinion is divided? He cannot turn to a hypothetic board of control or censorship. He can only disengage himself so far as possible from personal concern or bias and reach his own conclusions after careful study of the question before him.

How far the organized medical profession is, at this moment, from the proper control of this part of health education is fairly indicated in section 2, chapter III, of the Principles of Medical Ethics, which presumably reflects the consensus of the medical profession on the enlightenment of the public; that is, as nearly as the framers of the Principles could gage it. Doubtless each member of the committee had his own peculiar notions or views about the question, so they compromised on some hints about the prisons and asylums.

The House of Delegates recognizes, these editorial articles say, that the education of the public in matters of medicine and of health is desirable, and the editorials tell us that most of the fifteen individual physicians at present conducting health columns in the newspapers proffer sound advice—but occasionally a column goes daft on somersaults or fails to warn the public about factors which *may* lessen natural immunity, say getting the feet wet or sitting near an open window! If that is the worst the House can think of this newspaper health column evil, the joke is on the House, for they ain't seen the half of it.

The Association has by its authorized newspaper articles recognized the necessity for personal or individual responsibility for the idea in the article. All the newspaper articles sent out under the auspices of the A. M. A. have been accredited to individual authors. This is an essential principle in such education, whatever objections there may be made against it on the ground of personal advertising. If the author is likely to capitalize publicity, his motives may be open to question. If he enjoys no professional advantage from the publicity, no one can fairly criticize him. This personal responsibility carries with it something more. It is just as necessary that the individual responsible for the article shall have the confidence of his readers as it is that the article shall convey sound advice or teachings. And in order to command the confidence of readers the individual must have the courage to hold opinions of his own. Else why stick his name on anything he may publish?

Here in our own organization, among our colleagues, it might be worth while to hear other views on this modern problem. Criticism, favorable or unfavorable, of anything I may have perpetrated in my newspaper column would be most welcome to me. Indeed, I have received plenty of it from medical friends about the country, and I know such criticism, both kinds, has been of great help in my work.

WILLIAM BRADY, M.D., Buffalo.

INTRACELLULAR HYDROGEN ION CONCENTRATION

To the Editor:—In an editorial (THE JOURNAL, July 2) in which the work of Chambers and his co-workers (Chambers, R., and Pollack, H.: *J. Gen. Physiol.* **10**:739, 1927) was discussed and most deservedly praised, it was emphasized that the intracellular hydrogen ion concentration of living cells is remarkably unchanging and uniform except when the cells are injured. Such emphasis may be misleading to those uninformed of previous work in this field of investigation, for it has been clearly demonstrated that such fixity of reaction is *not* the case, particularly in functionally active secreting cells.

In 1924, observations were published (Stieglitz, E. J.: *Arch. Int. Med.* **33**:483 [April] 1924) clearly describing wide variations in intracellular hydrogen ion concentrations in the secreting renal parenchyma, and it was shown that these variations have distinct physiologic associations. Long previous to this work, Harvey and Bensley (*Biol. Bull.* **23**:255, 1912) and others clearly showed a wide range of reaction for specific secreting cells in the gastric gland.

The work of Chambers and his associates is of tremendous significance and beautiful in technic. The conclusions anent the specific tissues studied are amply warranted, but to draw generalizations from these data is precarious. The matter is far more involved than indicated, and interpretation is difficult. Scientific inquiry progresses systematically one step at a time, and the tendency to draw sweeping conclusions is prone to lead to many unnecessary pitfalls.

EDWARD J. STIEGLITZ, M.D., Chicago.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

INDICATIONS FOR TONSILLECTOMY

To the Editor:—In your opinion, would a tonsillectomy be contraindicated in a throat which gave a positive test for Vincent's angina but in which there was no lesion as a result of the presence of the spirillum? What might be the result of an operation under this condition? Kindly omit name.

M.D., Alabama.

ANSWER.—It has usually been deemed the best policy by most laryngologists not to operate on tonsils if some infection of the throat is present at the time. It would be safer, in case the organisms that cause Vincent's angina (better called Plaut-Vincent's angina) are present in the throat, to give the arsenic preparations that are usually employed, such as arsphenamine either locally or intravenously, and to wait until the throat smears become negative before operating. The reason for this is that, when tonsils are removed, a great many lymphatic spaces are opened, and if an acute infection is present somewhere in the throat, serious local or systemic complications may occur. It is quite true that many now advocate removal of tonsils at the time of a peritonsillar abscess, but we still believe that the principle of not operating when any acute infection is present in the throat is more likely to prove safer for the patient.

BISMUTH IN SYPHILIS — HEAT TREATMENT OF GONORRHEA

To the Editor:—1. What has been the result of the treatment of syphilis with sodium bismuth thioglycollate? Is there any better preparation of bismuth than "trepol"? 2. What is the best means and what have been the results of the heat treatment of gonorrhea? Please omit my name.

M.D., California.

ANSWER.—1. We do not know sodium bismuth thioglycollate. The reference is probably to bismuth thioglycollate. "A limited clinical experience indicates that bismuth thioglycollate produces a somewhat more rapid improvement in lesions than do the insoluble bismuth compounds" (Gruhzit, O. M.; Lyons, Edward; and Perkins, Ralph: Bismuth Thioglycollate in Experimental and Clinical Treatment of Syphilis, *Arch. Dermat. & Syph.* **15**:550 [May] 1927).

The Council on Pharmacy and Chemistry declared trepol and neotrepol ineligible for New and Nonofficial Remedies, because (at least as far as it applied to trepol) the composition is not correctly declared, and adequate tests are not furnished for the control of its identity and uniformity (THE JOURNAL **86**:135 [Jan. 9] 1926).

Potassium bismuth tartrate is a good preparation.

2. The heat treatment of acute gonorrheal urethritis in men was for a good many years a topic attracting the attention of the specialists. At first it was tried to heat the urethral mucosa by running hot water through a double current metal catheter introduced into the canal. Since production of heat within the tissues by means of high frequency currents came into vogue, this method was tried, the application being administered in two ways. Either the penis was placed in a vessel containing a watery salt solution into which was dipped one of the outlets of the diathermy machine while the indifferent metal plate was pressed somewhere against the trunk of the patient, or as an active electrode a metallic sound, introduced into the urethra, was used. None of these procedures produced any convincing results.

The theoretical conception that the heat applied should be apt to kill the gonococci on the surface and within the deeper layers of the mucosa was refuted by clinical and laboratory facts. Even in the test tube it is impossible to kill cultures of gonococci by heat somewhat exceeding the heat that may be used in living tissues without necrosing them. It also must be considered that the placing of an electrode in the acutely inflamed urethra may produce serious complications, such as periurethritis, cavernitis or perforating abscesses.

In the acute gonorrhea of females the conditions seem to be more favorable, probably because of the simpler anatomic construction of the female urethra; but even here the introduction of an electrode in the canal should be avoided, and the electrode is placed into the vagina, being brought in contact with the external urethral wall.

In acute gonorrheal involvement of the epididymis and prostate, medical diathermy is useful. While one does not always succeed in shortening the course of these disorders, the symptomatic relief in the majority of instances is prompt and satisfactory. For the treatment of acute epididymitis, special clamps are devised; they are obtainable at the medical supply houses. For the treatment of acute prostatitis a club-shaped electrode is introduced in the rectum and the indifferent metal plate is placed on the abdomen.

In treating chronic posterior urethritis, chronic prostatitis, chronic vesiculitis and chronic endocervical and endo-uterine gonorrhea, medical diathermy is a powerful aid.

The introduction of a metallic electrode into the cervical canal and into the uterine cavity is a gynecologic misdeed, because it is apt to bring about the development of severe perimetritis, parametritis and pyosalpingitis. Besides, this method of application is entirely superfluous because all the desirable heating of the portio and the uterine body is brought about by placing an appropriately constructed electrode back of the cervix and the uterine body, the upper pole of the instrument resting against the dome of the posterior vaginal fornix. That the intrapelvic organs in this way may be heated to any degree has been experimentally ascertained.

The heat treatment alone cannot be considered as an infallible curative agent, but it is a powerful adjuvant to all the measures indicated in such patients.

COLLOIDAL KAOLIN IN INTESTINAL TOXEMIA

To the Editor:—Please advise whether a colloidal solution of kaolin is efficacious in the absorption and elimination of intestinal toxemias. Kindly omit name.

———, New York.

ANSWER.—It is of little or no use for this purpose. Colloidal kaolin chiefly adsorbs basic substances from acid mediums. Alkaline fluid liberates the basic substance from its adsorption compound. Hence much adsorption in the alkaline intestine could hardly be expected. In practice, colloidal kaolin has been disappointing.

WHITE'S CRUDE COAL TAR OINTMENT

To the Editor:—Goeckerman of the Mayo Clinic has recommended White's crude coal tar ointment in the treatment of psoriasis. Can you advise me where this may be obtained, or its formula?

N. TROY GILBETTE, M.D., Corry, Pa.

ANSWER.—One formula for White's crude coal tar ointment is as follows: crude coal tar, one-half drachm (2 Gm.); zinc oxide, one-half drachm (2 Gm.); petrolatum, 1 ounce (30 Gm.).

PLASTIC SURGERY FOR SYNDACTYLISM

To the Editor:—One month ago I operated on a baby (aged 6 months) for syndactylism of the third and fourth fingers. Flaps of skin were raised and sutured over the denuded surface of each finger. Insufficient skin made it impossible to make a complete covering on one finger. The line of suture on this finger was at the junction of the medial and palmar aspects of the finger. Healing took place, but contracture of the finger developed from the scar tissue. Today I cut out the scar tissue and made the two skin surfaces meet. (The line of suture on the dorsal aspect of the other finger healed without contractures.) Could you give me an idea of the treatment to be pursued now? What can be done to prevent the formation of new contractures developing from scar tissue? (The tendons were not touched.)

M.D., Washington.

ANSWER.—It is extremely difficult to secure sufficient adjacent skin to cover the raw surface on both fingers when operating for syndactylism. While this is at times possible, in almost all instances the wisest procedure is to transplant skin to cover all raw surfaces at the time of the primary operation. Especial care should be exercised to place a large flap at the web, which should extend on both the flexor and the dorsal surfaces of the hand so that there will not be a line of scar at the web.

Where operation has been performed and there is a line of contracted scar tissue along the side of the finger, it is wise to dissect out the scar tissue and transplant skin. Any other method of treatment will probably lead to disappointment. Some aid may be secured in preventing contracture by means of binding the finger extended and adducted on a dorsal splint. This must be continued for some weeks after the operation and for some months it must be applied every night, but even with this aid contracture ensues in most patients when skin has not been transplanted. As to the transplantation of skin, while Thiersch grafts are fairly satisfactory, the best results are obtained by a free transplant of whole thickness skin, care being taken to remove all subcutaneous tissue and apply pressure after the transplantation from ten days to two weeks.

TENOSYNOVITIS OF HAND

To the Editor:—Can a tenosynovitis of the hand produce permanent loss of flexion of a terminal phalanx?

JACOB SPITZ, M.D., Boston.

ANSWER.—If the condition has progressed to the stage of destruction it may produce a permanent loss of flexion of the terminal phalanx, but practically every case can be restored to function by physical therapeutic measures, such as massage, passive movements or diathermy, or by operation supplemented by such physical therapeutic measures.

ACNE ROSACEA—CARDIAC ASTHMA

To the Editor:—1. What would be the most effective local and constitutional treatment of acne rosacea of three weeks' duration in a young woman, affecting the forehead, nose and adjoining cheeks? There seems to be no definite cause for this condition in this patient. Would ultraviolet rays help? 2. What would be the best treatment for cardiac asthma in a thin chested asthenic patient with slow, feeble, thready pulse and low blood pressure, and without kidney disease. The most aggravated symptom is shortness of breath and coughing up large quantities of mucus (sputum negative). The patient was well and a hard worker up to last year, at the age of 59 years. What heart stimulant would be best to use? Would iodides do any good intravenously?

M.D., Michigan.

ANSWER.—1. Acne rosacea in a young woman may be caused by some gastro-intestinal disturbance or by conditions associated with low blood pressure. The constitutional treatment requires regulation of the bowels, restriction of the diet, prohibition of rich food, alcohol, tea, coffee, spices and iodized salt. General hygienic measures are necessary to bring the blood pressure to a normal level. Local treatment is best accomplished by applications of lotio alba in varying strengths, ordinarily in the following formula: solution of calcium hydroxide (lime water), 120; potassium sulphide, 4; zinc sulphate, 4, or an ointment of 5 per cent each of sulphonated bitumen and ammoniated mercury. Ultraviolet rays are helpful in removing the eruption, particularly when the Kromayer lamp is used.

2. Before any heart stimulant is considered, it would be necessary to be certain that it is a heart condition. Tuberculosis must be ruled out by physical examination and history, and if necessary a roentgenogram of the chest should be taken. It is not ruled out by a negative sputum or by a great many negative sputums. The bacilli may be absent, or, in very chronic cases, special methods may be required to detect them. Many other pulmonary conditions must be considered. A malignant condition must be ruled out elsewhere, or with metastases in the lungs. If it is a heart condition, before a remedy is prescribed, it must be known just what the condition is, anatomically and physiologically, and the remedy chosen whose physiologic action will meet that condition. In cases of auricular fibrillation, it would be hard to find a drug better adapted to the physiologic needs than digitalis. In other conditions, one of the salts of theobromine or its allies may meet the needs. In most cardiac conditions, it should be borne in mind that the two most reliable remedies are rest and time. Iodides might be of value. Iodides intravenously would not do the patient any more good than iodides by mouth.

EPINEPHRINE AND LOCAL ANESTHESIA IN INTRANASAL SURGERY

To the Editor:—What is the most approved method of doing intranasal surgery under general anesthesia? Is it considered good practice to use a weak solution of epinephrine or epinephrine and cocaine in the nose? If not, what is recommended to obtain shrinkage before general anesthesia is given?

RAY PARKER, M.D., Johnstown, Pa.

ANSWER.—It is a most excellent idea to use epinephrine solution in the nose before general anesthesia is begun or at least during anesthesia before the operation is performed. A 1:1,000 solution may be rubbed on with cotton applicators and then a pause of five or six minutes made before the operation is begun in order to get as complete shrinkage and as much ischemia as possible. Cocaine, of course, is not necessary if general anesthesia is given. It is furthermore advisable to put in a posterior pack before commencing the operation, so that the blood will not run down into the nasopharynx and then down into the pharynx and trachea. If the operation is to be confined to the upper and middle portions of the nose, it is a good idea also to pack

gauze along the floor of the nose extending back to the posterior packing which has already been inserted. In this manner there will be little interference in the operative field from the presence of blood.

STATIC AND TUBE STANDS FOR ROENTGEN-RAY THERAPY

To the Editor:—I have a tube stand for therapy, with wooden arms supporting the lead glass bowl. When filters are used there is considerable static discharge from the filters to the patient, except when a ground wire is attached to the filters. I usually operate a broad focus Coolidge tube at 2 to 5 ma. and with a 6 to 7 inch spark gap potential. Would you consider the static dangerous to the patient or to the tube? Do you consider wooden arm tube stands suitable for roentgen-ray therapy? Please omit my name.

M.D., Virginia.

ANSWER.—A roentgen-ray tube stand constructed of wood and used in roentgen-ray therapy will, under ordinary circumstances, provide sufficient insulation to minimize a high tension leak to the patient's body. A metal stand with wooden arms supporting a lead glass bowl will also prove satisfactory, as a rule; but there are circumstances in which these wooden parts become partial conductors, notably in damp weather.

A static discharge to the patient might occur in the case of a poorly grounded stand with the tube too close to the patient's skin. In the question, this distance is not mentioned. Therefore it is difficult to make an accurate reply. Using a 6 or 7 inch spark gap at 5 milliamperes there should be no static spark from the metal filters to the patient, unless some part of the filter approaches the skin closer than, say, 3 inches. It is proper to ground the tube stand and also the filters. It may be that the bulb of the roentgen-ray tube is too close to the surface of the metal filters which act as a condenser, which, becoming "loaded," endeavors to discharge itself where resistance is least, which might, under certain circumstances, be the patient. This static discharge to the patient is not dangerous, but it is very annoying and disturbing to the one being treated, and, therefore, should be avoided. Some patients misinterpret this static spark discharge for the effect of the roentgen ray, and in one case a suit was instituted on the claim that this was a roentgen-ray burn.

EFFECTS OF BOBBING ON HAIR

To the Editor:—I am frequently asked to advise women as to the effects, both immediate and later, of bobbing hair and curling it frequently, and particularly the effects of "permanent waves." Textbooks on diseases of the skin, even the latest editions, do not take up this subject.

LEONARD HAYS, M.D., Hagerstown, Md.

ANSWER.—Bobbing the hair probably has no permanent effect on it. It probably does not make it coarse or make it grow less vigorously or more vigorously, either for a short time or permanently. Curling it and permanent waving may cause breaking of the hair, but this is simply a mechanical injury to hair that has already completed its growth and does not produce a permanent bad effect on the growth of the hair.

CORRECTION OF ACID MOUTH

To the Editor:—I should like some information relative to a diet for the correction of acid condition of the mouth which causes destruction of the teeth. Is there such a condition and, if so, is there a corrective diet?

J. W. BENNIE, M.D., Clearwater, Neb.

ANSWER.—The general assumption that normal saliva is alkaline depends on the fact that it turns red litmus paper blue. Owing to its high content of carbon dioxide, however, it displays an acid reaction toward carbonic acid sensitive indicators, like phenolphthalein. The real acidity measured as H ion concentration of the saliva ranges from p_H 5.25 to 7.86, with 6.63 as the average. As the p_H for neutral reaction is 7.07, the reaction of saliva is in general weakly acid, sometimes neutral, occasionally weakly alkaline. It is probable that saliva is always weakly acid owing to the carbonic acid it contains, and that it becomes alkaline only after the carbon dioxide has escaped.

There is no known definite relation between the reaction of saliva and the ingestion of foods. Even the internal administration of acids or alkalis does not produce any change: nor is there a definite relation between salivary reaction and disease. It has been found high in fever patients and in patients with diabetes. But this has been ascribed to insufficient oral hygiene rather than to the disease. One thing is certain, that saliva in the cavities of carious teeth may become quite acid.

When the mouth is not kept clean or in a cleanable condition, the acidity of the saliva is likely to become especially high after sugar, bread or starchy food in general. This is due to the acid products of carbohydrate fermentation. There is here a vicious circle in that caries favor acid production and acid causes caries. The correction lies in cleanliness of the mouth and in dental care to keep the mouth in a cleanable condition. Unless or until such a condition is realized, carbohydrate favors caries. As, however, we cannot get along without carbohydrate, there is really no corrective diet for this condition. One dietary habit that might well be corrected in the interest of oral hygiene is to abandon the use of sweet or starchy dessert at the end of meals.

SUNLIGHT AND ALOPECIA

To the Editor:—1. A question has come up lately regarding the advisability of going bareheaded during the summer months. Is it or is it not true that sunlight, especially when the sun's rays are warm, has a deleterious effect on the hair? It has always been my impression that baldness might be due, in part at least, to the fact that civilized man has kept his head covered for a period of several hundred years. That, in addition to the tightness of the hat band, which interferes with the proper circulation of the scalp, has been my concept of the probable etiology of baldness. Lately an article has come to my attention, apparently fostered by hat manufacturers, which states that the heat rays of the sun especially are harmful. Please give your opinion on this subject. 2. What treatment would you suggest for very fine dry hair with clean scalp and no dandruff, which shows a tendency to drop out to some extent? My treatment has been castor oil with 20 per cent alcohol. At times I have also used plain liquid petrolatum. 3. Please suggest the name and publisher of a work on dermatology which in your opinion goes thoroughly into detail on the subject of baldness and its preventive treatment. Please delete name.

M.D., Pennsylvania.

ANSWER.—1. There is a difference of opinion among dermatologists on the effect of extreme exposure of the hair and scalp to sunlight. Some men think the stimulation is useful; others are quite of the contrary opinion. The personal opinion of the writer of this answer is that such exposure is likely to be deleterious. Our correspondent's impressions about the etiology of baldness are common. Nobody actually knows its etiology.

2. Probably persistent massage, done by the individual himself—simply rubbing the scalp back and forth with his fingers until it feels a little bit tender, and doing this twice a day—is of some use in controlling premature baldness; as much use as anything else. The scalp should be kept clean by washing it as often as necessary with soap and water, say once a week. If the hair is dry, grease it lightly. For this purpose there is nothing better than liquid petrolatum, which has the advantage that it does not become rancid.

3. Diseases of the Hair, by Jackson and McMurtry, published by Lea & Febiger in 1912, is an excellent treatise on this subject.

SKIN CLIPS OR SUTURES

To the Editor:—What is the status of using clips for suturing wounds? Is there sufficient authority for their use, as compared with threaded sutures, to make it stand test in court? Kindly omit name.

M.D., Illinois.

ANSWER.—Michel clips have been used for suturing wounds of the skin for many years and have been found quite satisfactory. They are about as suitable for skin closure as are sutures, but they cannot be made to take the place of tension sutures.

KETOGENIC DIET IN EPILEPSY

To the Editor:—Please tell me where I can get an outline of the ketogenic diet used in the treatment of epilepsy. Is it valuable in the treatment of petit mal?

M.D., Minnesota.

ANSWER.—M. G. Peterman, in his article entitled "Ketogenic Diet in Epilepsy" (THE JOURNAL, June 27, 1925, p. 1979), writes: "Every patient treated with the diet is given an individual prescription." In a later article, entitled "Epilepsy in Childhood" (THE JOURNAL, June 11, 1927, p. 868), the same author gives a sample menu, together with general principles from which other menus could be easily calculated.

THE JOURNAL, June 25, 1927, p. 2028, contained an article by H. F. Helmholz, entitled "The Treatment of Epilepsy in Childhood: Five Years' Experience with the Ketogenic Diet."

Four different diet lists are given in an article by M. G. Peterman, entitled "The Ketogenic Diet in the Treatment of Epilepsy". (*Minnesota Med.* **7**:708 [Nov.] 1924).

The literature on the ketogenic diet is voluminous and many references accompany the article by M. G. Peterman, already cited as appearing in THE JOURNAL, June 11, 1927.

The question concerning the use of the diet in petit mal is answered by the following sentence, quoted from an article by M. G. Peterman, entitled "The Ketogenic Diet in the Treatment of Epilepsy" (*Am. J. Dis. Child.* **28**:28 [July] 1924): "The most favorable results have been obtained in cases of petit mal, which form of epilepsy does not respond so well to phenobarbital."

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Detroit, Sept. 12. Sec., Dr. W. H. Wilder, 122 S. Michigan Blvd., Chicago.

ALASKA: Juneau, Sept. 6. Sec., Dr. Harry C. DeVighne, Juneau.

NATIONAL BOARD OF MEDICAL EXAMINERS, Parts I and II., Sept. 14-16. Applications should be made by August 10. Sec., Dr. John S. Rodman, 1600 Walnut Street, Philadelphia.

NEW HAMPSHIRE: Concord, Sept. 8-9. Sec., Dr. Charles Duncan, Concord.

OKLAHOMA: Oklahoma City, Sept. 13-14. Sec., Dr. J. M. Byrum, Shawnee.

PORTO RICO: San Juan, Sept. 6. Sec., Dr. D. D. Biascoechea, Box 804, San Juan.

Massachusetts March Examination

Dr. Frank M. Vaughan, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held in Boston, March 8-10, 1927. The examination covered 17 subjects and included 70 questions. An average of 75 per cent was required to pass. Of the 57 candidates taking the physicians' and surgeons' examination, 54, including 5 osteopaths, passed and 23, including 10 osteopaths, failed. The following colleges were represented:

PASSED College	Year Grad.	Per Cent
Boston University School of Medicine....(1925) 83.8, (1926) 78.3,		83.5
College of Physicians and Surgeons, Boston.....(1926) 76.7,		83.5
Harvard University.....(1921) 85.5, (1923) (1925) 86.7, (1926) 81.7, 84.1		86.4,
Middlesex College of Medicine and Surgery.....(1924) (1926) 76.7, 77		76.3
Tufts College Medical School.....(1925) (1926) 76, 78.5, 79, 82.1, 89		79.1
Washington University School of Medicine.....(1925)		85.8
Creighton University College of Medicine.....(1924)		85.5
Bellevue Hospital Medical College.....(1889)		78.4
Woman's Med. College of Pennsylvania...(1921) 89.2, (1926)		84.9
University of Vermont College of Med....(1925) 85.3, (1926)		87.3
Queen's University Faculty of Medicine...(1914) 76.9, (1924)		79.8
University of Paris, France.....(1925)		77.5
Osteopaths.....75.1, 75.9, 77.2, 78.7,		78

FAILED College	Year Grad.	Per Cent
Middlesex College of Medicine and Surgery.....(1922) (1923) 67.9, 70, 73, (1924) 69.5, (1926) 65.5, 66.6, 68.9, 73.6		71.2,
Kansas City University of Physicians and Surgeons....(1926)		65.4
University of Buffalo Department of Medicine.....(1919)		71.7
University of Montreal Medical Faculty..(1924) 71.2, (1925)		56.4
Osteopaths.....25, 51.5, 64, 67.5, 68.7, 69, 69.7, 72.5, 73.5		73.6

Idaho April Examination

Hon. Fred E. Lukens, Commissioner of Law Enforcement of Idaho, reports the written examination held in Boise, April 5-7, 1927. The examination covered 13 subjects and included 130 questions. An average of 75 per cent was required to pass. Two candidates were examined, both of whom passed. Eight candidates were licensed by reciprocity. The following colleges were represented:

PASSED College	Year Grad.	Per Cent
Harvard University .....(1925)		86
Creighton University College of Medicine.....(1926)		84

LICENSED BY RECIPROCITY College	Year Grad.	Reciprocity with
College of Medical Evangelists.....(1925)		California
Denver College of Medicine.....(1900)		Washington
Northwestern University Medical School.....(1907) (1912) Washington		Illinois
University of Illinois College of Medicine.....(1901)		N. Dakota
University of Minnesota Medical School.....(1913)		Minnesota
Western Reserve University School of Medicine.....(1923)		Ohio
University of Pennsylvania School of Medicine.....(1925)		Wisconsin

Book Notices

MAORI SYMBOLISM. Being an Account of the Origin, Migration and Culture of the New Zealand Maori as Recorded in Certain Sacred Legends. Report made by Ettie A. Rout, New Zealand Law Court Reporter from the evidence of Hohepa te Rake, an Arawa Noble. With a preface by Sir William Arbuthnot Lane, Bart., C.B., M.S. Cloth. Price, $6. Pp. 322, with illustrations. New York: Harcourt, Brace & Company, Inc., 1926.

The major part of the evidence in this report was furnished to the author by a noble Maori, with the purpose of putting on record sacred legends handed down by word of mouth. It appears that the New Zealand Maori, or Mauri as better spelled and pronounced, claim that they originated in Assyria, left Mexico 3,400 years ago for Peru, and thence proceeded westward, reaching New Zealand about 1,200 years ago. At that time numbering 800, they multiplied to more than a million at the end of the eighteenth century, but after the coming of Europeans they dwindled to the 50,000 of today. The decrease is attributed to bullets and European diseases. Their ancient civilization is said to have included monolithic human images 30 feet tall, terrace gardens, the discarding of bow and arrow in warfare because these eliminated the tall men and were thus inimical to race culture, duels between monarchs to avoid indiscriminate bloodshed, "peaceful death" to hopelessly wounded soldiers or to deformed children, bowel movements thrice a day, emphasis on sunlight as the life giver and on exercising the waist rather than the limbs, control of sex of the unborn child (p. 72), an art impregnated with male and female life-symbols, and a number of utopian doctrines plagiarized by Samuel Butler, Ruskin, Darwin and Wallace.

NEW AND NONOFFICIAL REMEDIES, 1927, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1927. Cloth. Price, postpaid, $1.50. Pp. 473 + XLVII. Chicago: American Medical Association, 1927.

Among the hundreds of new remedies that are offered to the medical profession each year are always some that have real value as additions to the physician's armamentarium. But how is the individual physician to discriminate among these? He cannot take at face value the optimistic statements of the advertisements and the manufacturer's detail man. He does not have the time to investigate and prove them. Fortunately this is done for him by the distinguished group of scientists who compose the Council on Pharmacy and Chemistry of the American Medical Association. The current edition of New and Nonofficial Remedies presents to the medical profession disinterested, critical information about the proprietary preparations which the Council has found worthy of acceptance. In addition to the description of these proprietary preparations, the book considers unofficial remedies which, in the opinion of the Council, are worthy of consideration.

The book is designed for ready reference: each preparation is classified, and each classification is preceded by a general and critical discussion of the group by one who is an authority on the subject; there is an exhaustive index. A glance at the preface shows the most important revision this year to be that of the general article on Lactic Acid-Producing Organisms, which has been radically revised and rewritten to show the present status of therapy in this field. Many preparations have been omitted because the manufacturers or distributors have not presented evidence to demonstrate their continued eligibility. Some have been omitted because they have become official articles by inclusion in the tenth edition of the U. S. Pharmacopeia; such articles when marketed under the pharmacopeial name or synonym and without special therapeutic claims do not require description in New and Nonofficial Remedies.

Among the preparations newly admitted to the book are isacen, a product related to phenolphthalein; ipral, a barbital hypnotic; a cod liver oil concentrate having a definite vitamin A and vitamin B potency, and three erysipelas streptococcus antitoxin preparations.

Physicians who wish to know why a given proprietary is not described in New and Nonofficial Remedies will find in the back of the book a bibliographic index to proprietary and unofficial articles not included in N. N. R., which is a cumulative list of references to published articles dealing with preparations that have not been accepted.

New and Nonofficial Remedies is indispensable to any physician who prescribes drugs. It contains information about medical products which cannot be found in any other publication.

VENEREAL DISEASE: Its Prevention, Symptoms and Treatment. By Hugh Wansey Bayly, M.C., Hon. Sec., Society for the Prevention of Venereal Disease. Third edition. Cloth. Price, 10/6 net. Pp. 242, with 77 illustrations. London: Faber & Gwyer, Ltd., 1927.

The author takes a decided stand against the attempts of some lay people to discredit the importance of prophylactic measures against inoculation with venereal diseases. He emphasizes strongly the necessity of immediate self-disinfection. At the same time he demands full instruction of the public as to the dangers of infection and as to the efficacy of the prophylactic methods developed by the medical profession. The clinical diagnosis of syphilis and gonorrhea is fully gone into and the text is illustrated by instructive pictures, many of them in natural colors. The urologic and microscopic diagnosis is thoroughly discussed and all the details employed for the procuring of the specimens are mentioned. The phases of treatment are elucidated by a full description of all the paraphernalia to be used with regard to the demands of daily practice. The usefulness of diathermy in gonorrheal disorders, while acknowledged, is wisely restricted to chronic processes. Special attention is paid to the establishing of the concept of a true cure with the dependent permission of marriage. In discussing the treatment of advanced parasyphilitic disturbances by inoculation with malaria and the combination of arsenic preparations with embodiment of foreign proteins, the author withholds definite judgment until further experience has been reported. The book may be considered a concise but practically complete guide for the prophylaxis, diagnosis and treatment of venereal infections.

GENERAL SYSTEMATIC BACTERIOLOGY: History, Nomenclature, Groups of Bacteria. By R. E. Buchanan, Ph.D., Professor of Bacteriology, Iowa State College, Ames, Iowa. Cloth. Price, $6. Pp. 597. Baltimore: Williams & Wilkins Company, 1925.

This is the first of a series of monographs on the subject to be brought out under the editorial direction of the Society of American Bacteriologists. It presents in three parts a classification and an historical account of bacteria, several codes of nomenclature and their relationship to bacterial terminology, and an alphabetical list of all the names that have been used by various authors to designate bacterial subgenera, genera or higher groups. The original descriptions are quoted as well as the varied spellings of subsequent writers; sufficient information to present the exact status of each name. Typical of a discussion is the following concerning the term "treponema":

Treponema. A generic name proposed by Schaudinn (1905, p. 1728) for the species *Treponema pallida*, the causal organism of syphilis. This organism was first named *Spirochaete pallidum* by Schaudinn and Hoffmann (1905), later the generic name *Spironema* (q. v.) was proposed by Vuillemin (1905). Schaudinn noted that Spironema was preoccupied, and proposed *Treponema*. A short time later *Microspironema* was proposed by Stiles and Pfender (1905). Blanchard (1906, p. 4) gives the following generic diagnosis:

Corps spirale, non aplati, à section cylindrique, effilé aux extrémites. Un flagelle à chaque extrémité; pas de membrane ondulante. Multiplication par division longitudinale, le stade initial pouvant être marqué par la duplicité du flagelle à l'une des extremities. Une seule espèce certaine: Tr. pallidum (Schaudinn (1905).

This generic name was also used by Swellengrebel (1907, p. 582). Dobell (1910, p. 536) extended the definition to include all the spirochetes parasitic in animals. Döflein (1911) treats *Treponema* as a subgenus under *Spirochaeta*. Gonder (1914, p. 687) gives the following description:

Der einzellige Organismus ist stark flexibel, wodurch neben der schrauben oder korkzieherartigen Bewegung auch eine schlängelnde, peitschende. Bewegung hervorgerufen werden kann. Die eng gewundene Spirale bleibt dabei fast unverändert, ist präformiert. Besonders bei den pathogenen Formen ist die Zahl der steilen Windungen auffallend grosz. Eine feine plasmatische Hülle (periplast), die an den Enden in feinste geiszelartige Fortsätze auslaufen kann, ist edenfalls vorhanden. Die Fortpflanzung geschieht, soweit bis heute festgestellt werden konnte, durch Längsoder Querteilung.

Winslow et al. (Committee Soc. Am. Bact., 1917, p. 563) include this as genus four of the family *Spirochaetaceae* with the description:

Treponema Schaudinn. Parasitic and frequently pathogenic forms with undulating or rigid spirilliform body. Without crista or columella. With or without flagelliform tapering ends.

The type species is Treponema pallidum Schaudinn.

Buchanan (1918, p. 544) proposed the following description:

Cells slender, spiral, not flattened, attenuated at tips, without crest. Multiplication by longitudinal or by cross division. Parasites in warm-blooded animals. Motile.

The type species is *Treponema pallida* Schaudinn.

Castellani and Chalmers (1919, p. 454) include this as the single genus of the family *Treponemidae* q. v.

Bergey et al. (1923, p. 426) include this genus as the fifth in the family *Spirochaetaceae* with the diagnosis: "Parasitic and frequently pathogenic forms with undulating or rigid spirilliform body. Without crista or columella. With or without flagelliform tapering end.

DOC: FACTS, FABLES AND FOIBLES. By John A. Dillon, M.D. Cloth. Price, $2. Pp. 168. Boston: Richard G. Badger, 1926.

Under the nom de plume RenigAde, Dr. John A. Dillon for several years has published sketches in the *Kansas Medical Journal*. These have been outstanding in their philosophy and in their humor. Some of them have been republished in part in the Tonics and Sedatives column. Any physician who wishes to while away a few hours in thorough enjoyment of a revelation of medical foibles will find his money for the purchase of this book exceedingly well spent. Examples of the humor and epigram of this volume are the following:

The American College of Surgeons has practically done away with fee-splitting, as it is called. The result has been that most physicians have felt themselves called upon to do their own operating and now surgeons are almost as common as filling stations.

The swell girls you have met through the medium of your friend, the fizz mixer, are also fairly well known around the soft drink palaces and can usually be found running in droves about dish washing time. They are mostly good girls who quit school in the seventh grade on account of headaches.

The practice of medicine is a jealous mistress and will not tolerate intrigues with golf, baseball nor anything else that tends to divorce affection from the legally adopted spouse.

No patient with a symptom complex sufficiently grave to call the doctor will accept the services of one whose breath smells like something the cat found under the granary.

To ask a badly bow-legged man to point the knees toward each other and pivot on his metatarsal would, of course, be useless instructions for the reason that we have never known a bow-legged man who knew what pivot was.

The average golf player can make about the same score with a boat ear and a potato masher as he can with a gunny-sack full of niblicks and stances.

DIE ABTREIBUNG. Eine medizinisch-soziologische Studie in bildlichen Darstellungen für Ärzte, Juristen und Soziologen. Von Universitäts-Professor Dr. W. Liepmann, Direktor des Deutschen Instituts für Frauenkunde. Paper. Price, 12 marks. Pp. 24, with 24 plates. Berlin: Urban & Schwarzenberg, 1927.

This small work is full of astonishing and depressing facts. Criminal abortion in Europe is on the increase. In Russia it is a legalized procedure, and records show that almost a million abortions have been performed. In Germany in 1921 there were (estimated) 240,000 (Benthin); in 1923 (estimated), 500,000 (Hyneman); in 1926 (estimated), 875,750 (Neverman), and among the last, 43,782 deaths. Sepsis, aided by perforation of the uterus (peritonitis and hemorrhage), explains the mortality. A table shows the rapid increase of the number of reported uterine perforations, 500 per cent in the last thirteen years. The vast majority are produced by physicians who attempt the abortion in their offices or at home; therefore Liepmann insists that therapeutic abortion and the treatment of spontaneous abortion should be reserved for the clinic. The clinical history and course of twenty cases of perforation are given together with beautifully executed plates descriptive of the operative or postmortem observations. An interesting paragraph is devoted to the psychology of the physician and the patient. The first is in a state of amentia; the latter hides the facts. Liepmann does not hope for much improvement through better medical education. The city and state should devote part of the money now spent on saving defectives to the establishment of institutions for the care of pregnant women and to the advancement of their interests. A good monograph, presented in Liepmann's clear-cut teaching style, intended to warn the profession and the public against criminal abortion.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

THE PLAGUE PROBLEM IN SOUTH AFRICA; HISTORICAL, BACTERIOLOGICAL AND ENTOMOLOGICAL STUDIES. By J. Alexander Mitchell, M.B., Ch.B., D.P.H., Secretary for Public Health and Chief Health Officer for the Union of South Africa, J. H. Harvey Pirie, B.Sc., M.D., F.R.C.P.E., Bacteriologist and Pathologist, Research Division of the Institute, and A. Ingram, M.D., Medical Entomologist to the Institute. Vol. III of Publications of the South African Institute of Medical Research. Paper. Pp. 85-256, with illustrations. Johannesburg: South African Institute for Medical Research, 1927.

Review of further attempts to eliminate an ancient pest from one section of the world.

STUDIES ON CLONORCHIS SINENSIS (COBBOLD). By Ernest Carroll Faust, M.A., Ph.D., OO-Keh Khaw, M.B., Ch.B., D.P.H., Yao Ke-Fang, M.D., and Chao Yung-An. With a consideration of the Molluscan Host of Clonorchis Sinensis (Cobbold) in Japan, China and Southeastern Asia and Other Species of Molluscs Closely Related to Them. By Bryant Walker, Sc.D. Monographic Series, No. 8 of the American Journal of Hygiene. Paper. Pp. 284, with illustrations. Baltimore: American Journal of Hygiene, 1927.

Monographic consideration of a tropical parasite.

CONTRIBUTIONS TO THE STUDY OF MINERS' PHTHISIS. By A. Mavrogordato, M.A., M.R.C.S., L.R.C.P., Research Fellow in Industrial Hygiene, South African Institute for Medical Research. Publications of the South African Institute for Medical Research. Volume III. No. XIX. Paper. Price, 5 shillings. Pp. 83, with illustrations. Johannesburg: South African Institute for Medical Research, 1926.

Monograph with conclusion that prevention demands suppression of dust, removal of open cases, assay of resistance and experiments with preventive vaccines.

THE STATUS OF HYGIENE PROGRAMS IN INSTITUTIONS OF HIGHER EDUCATION IN THE UNITED STATES. A Report for the Presidents' Committee of Fifty on College Hygiene. By Thomas A. Storey, M.D., Ph.D., Director and Professor of Hygiene and Physical Education for Men, Stanford University. Volume II. No. 1. Paper. Pp. 125. Stanford University: Stanford University Press, 1927.

Report of survey indicating that teaching of hygiene is lamentably weak in institutions of higher education.

HANDBUCH DER PRAKTISCHEN THERAPIE ALS ERGEBNIS EXPERIMENTELLER FORSCHUNG. Herausgegeben von Reinhard von den Velden, a. o. Professor an der Universität Berlin, und Paul Wolff, Dr. Med. et Phil., Berlin. II Band, 1 Hälfte, und II Band, 2 Hälfte. Paper. Price, 76 marks. Pp. 1333, with 22 illustrations. Leipsic: Johann Ambrosius Barth, 1927.

Two parts of extensive German system of therapeutics.

BEITRÄGE ZUR GESCHICHTE DER ERKENNUNG DER BERIBERI ALS AVITAMINOSE. Von Prof. Dr. G. Grijns. Neue Folge, Heft 1. zu Fortschritte der naturwissenschaftlichen Forschung. Herausgegeben von Prof. Dr. Emil Abderhalden. Paper. Price, 3 marks. Pp. 32. Berlin: Urban & Schwarzenberg, 1927.

Monographic consideration tracing growth of knowledge concerning vitamin deficiency in relation to beriberi.

DIE CHIRURGISCHE BEHANDLUNG DER GEHIRNTUMOREN: Eine klinische Studie. Von Dr. Herbert Olivecrona, Privatdozent, Oberarzt an der chirurgischen Universitätsklinik im Seraphimerkrankenhaus, Stockholm. Paper. Price, 27 marks. Pp 344, with 228 illustrations. Berlin: Julius Springer, 1927.

Monographic consideration of operation for brain tumor with study of almost a hundred cases.

THE PREVENTION OF DIPHTHERIA. By J. Graham Forbes, M.D., F.R.C.P., D.P.H. Medical Research Council. Special Report Series, No. 115. Paper. Price, 2s. net. Pp. 84, with illustrations. London: His Majesty's Stationery Office, 1927.

Monograph concluding that Schick test and immunization constitute a great advance and should be widely adopted.

HANDBUCH DER MIKROSKOPISCHEN ANATOMIE DES MENSCHEN. Herausgegeben von Wilhelm v. Möllendorff. Band V. Verdauungsapparat. 1-Teil. Mundhöhle. Speicheldrüsen. Tonsillen, Rachen. Speiseröhre. Serosa. Von T. Hellman, und Anderen. Paper. Price, 72 marks. Pp. 374, with 276 illustrations. Berlin: Julius Springer, 1927.

Volume five of a new system of histology.

DIE UNREGELMÄSSIGE HERZTÄTIGKEIT. Von K. F. Wenckebach und H. Winterberg. 2 Bands (Textband und Tafelband). Cloth. Pp. 635, with 63 illustrations in "Textband" and 184 plates in "Tafelband." Leipsic: Wilhelm Engelmann, 1927.

Complete and authoritative consideration of use of modern methods of study of lesions of the heart.

LA BRONCHITE CHRONIQUE SYPHILITIQUE. Etude anatomo-radiologique et clinique des scléroses bronchiques et péribronchiques au cours de la syphilis tertiaire du poumon. Par R. Benda. Paper. Price, 18 francs. Pp. 148, with illustrations. Paris: Gaston Doin & Cie, 1927.

Monograph on syphilis of the lung with special reference to differential diagnosis.

THE LIFE AND WORK OF SIR PATRICK MANSON. By Philip H. Manson-Bahr, D.S.O., M.D., F.R.C.P., and A. Alcock, C.I.E., LL.D., F.R.S. Cloth. Price, $5.50. Pp. 273, with illustrations. New York: William Wood & Company, 1927.

Attractive biographical note of one of the great investigators of tropical diseases.

ALLGEMEINE KONSTITUTIONSLEHRE IN NATURWISSENSCHAFTLICHER UND MEDIZINISCHER BETRACHTUNG. Von O. Naegeli, o. ö. Professor der inneren Medizin an der Universität Zürich. Paper. Price, 9.60 marks. Pp. 118, with 14 illustrations. Berlin: Julius Springer, 1927.

Monographic consideration on relation of constitution to disease.

GRUNDBEGRIFFE DER KOLLOIDCHEMIE UND IHRER ANWENDUNG IN BIOLOGIE UND MEDIZIN. Von Dr. Hans Handovsky, a. o. Professor an der Universität Göttingen. Second edition. Paper. Price, 2.70 marks. Pp. 62, with 6 illustrations. Berlin: Julius Springer, 1927.

New edition of elementary handbook of colloid chemistry.

FRAKTUREN UND LUXATIONEN. Ein kurzgefasstes Lehrbuch für Ärzte und Studierende. Von Dr. Med. K. H. Bauer, a. o. Professor für Chirurgie an der Universität Göttingen. Paper. Price, 15 marks. Pp. 236, with 237 illustrations. Berlin: Julius Springer, 1927.

Brief routine textbook of fractures and dislocations.

LISTER AS I KNEW HIM. By John Rudd Leeson, M.D., C.M., M.R.C.S., Senior Consulting Physician, St. John's Hospital, Twickenham. Cloth. Price, $3.50. Pp. 212, with illustrations. New York: William Wood & Company, 1927.

A brief biography with a personal point of view.

L'ANGINE DE POITRINE ET L'ANGINE ABDOMINALE. Par D. Daniélopolu, professeur de clinique médicale à la Faculté de médecine de Bucarest. Paper. Pp. 435, with 159 illustrations. Paris: Masson & Cie, 1927.

Beautifully illustrated volume on angina pectoris with special reference to diagnosis.

EL INSTINTO DE LA MUERTE. Por R. Nóvoa Santos. Paper. Pp. 184, with illustrations. Madrid: Javier Morata, 1927.

Imaginative Spanish views of death.

HOW TO MAKE THE PERIODIC HEALTH EXAMINATION. A Manual of Procedure. By Eugene Lyman Fisk, M.D., Medical Director, Life Extension Institute, and J. Ramser Crawford, M.D., Assistant Medical Director, Life Extension Institute. Foreword by Major General Merritte W. Ireland, Surgeon General, United States Army. Cloth. Price, $4. Pp. 393, with illustrations. New York: Macmillan Company, 1927.

TWENTY-FOURTH ANNUAL REPORT OF THE BUREAU OF SCIENCE, PHILIPPINE ISLANDS: Including a Summary of Twenty-Second and Twenty-Third Annual Reports for the Year Ending December 31, 1925. By Wm. H. Brown, Director of the Bureau of Science. Paper. Pp. 61. Manila, 1927.

PROCEEDINGS OF THE FORTY-FIRST ANNUAL MEETING OF THE CONFERENCE OF STATE AND PROVINCIAL HEALTH AUTHORITIES OF NORTH AMERICA, MAY, 1926. American Health Congress Series. Vol. III. Cloth. Pp. 236. Albany: Boyd Printing Company, 1927.

PHYSIOLOGIE NORMALE ET PATHOLOGIQUE DU GLOBULIN (PLAQUETTE DE BIZZOZERO). Par Jacques Roskam, titulaire de la chaire de pathologie à l'Université de Liége. Boards. Price, 25 francs. Pp. 151, with illustrations. Paris: Universitaires de France, 1927.

BIENNIAL REPORT OF THE STATE BOARD OF HEALTH TO THE GOVERNOR OF THE STATE OF ARIZONA FOR THE YEARS 1925-1926. Paper. Pp. 38. Phoenix, 1927.

STATISTICAL REPORT OF THE HEALTH OF THE NAVY FOR THE YEAR 1924. Paper. Price, 4d. 6s. net. Pp. 127. London: His Majesty's Stationery Office, 1927.

PORADENITIS Y SU TRATAMIENTO POR EL TÁRTARO EMÉTICO. Tesis de grado. Por Jos J. Aristizabal M. Paper. Pp. 48. Medellin, 1927.

SCRITTI BIOLOGICI. Raccolti da Luigi Castaldi. Paper. Pp. 274, with illustrations. Siena, 1927.

Medicolegal

Valid Complaint of Unlawfully Prescribing Morphine

(Ex parte Lord (Calif.), 250 Pac. R. 714)

The Supreme Court of California, in discharging a writ of habeas corpus and remanding the petitioner to custody, says that he was found guilty on a complaint which charged that on a certain date he, a licensed and practicing physician and authorized to prescribe certain narcotic drugs, including morphine, did then and there wilfully, wrongfully and unlawfully prescribe and deliver to a named woman under a prescription more than 4 grains of morphine, to wit, approximately 5 grains of morphine, for one daily treatment of the woman, she being then and there a habitual user of narcotic drugs, to wit, of morphine. The petitioner contended that the complaint was fatally defective in failing to allege that he did not furnish or prescribe the morphine in good faith, and that the woman, his patient, was not suffering from an incurable disease, ailment or injury. But the court does not agree with that contention.

The prohibition against furnishing or prescribing narcotic drugs to habitual users thereof is found in section 8 of the state statute of 1907, as amended, the effect of which section is to permit a licensed physician to furnish or prescribe in good faith narcotic drugs to any habitual user thereof under his professional care, provided such prescriptions are not given or substances furnished for the purpose of evading the provisions of the statute. The limitation as to the amount of narcotic drugs that may be so furnished or prescribed is found in section 8½, added in 1919, by which a physician is prohibited from prescribing or furnishing more than 4 grains of morphine as a daily treatment. The good faith and intent with which the morphine is furnished or prescribed has no relation to the amount of the drug so furnished or prescribed to the person for whom it is prescribed by the physician. If the morphine is prescribed in good faith to a habitual user of narcotic drugs under the professional care of the physician and, without intent to evade the purposes of the statute, then the physician has not offended against the provisions of section 8. But, if in so prescribing or furnishing the drug, even though he complies with all the terms of section 8, he exceeds the amount called for by section 8½ as a daily treatment, he has violated the prohibition contained in the latter section and subjected himself to the penalty prescribed by the statute. Therefore, in charging the petitioner with a violation of section 8½ of the statute, as the complaint herein attempted to do, it was not necessary to allege therein that the petitioner had also offended against the provisions of section 8, or to show in any manner his failure to meet its requirements.

The provision of section 8½ permitting more than 4 grains of morphine to be prescribed or furnished to a patient suffering from an incurable disease, ailment or injury is an exception to the general rule laid down by section 8½ of the statute making it an offense to prescribe or furnish more than 4 grains of morphine as a daily treatment, and is contained in a proviso to the definition of the offense as contained in section 8½. The authorities in California are without conflict that such exceptions and provisos are to be negatived in the pleading only where they are descriptive of the offense or define it, and that where they afford matter of excuse merely they are to be relied on in defense. The petitioner appeared to concede that to be the law, but contended that it had no application here for the reason, as he asserted, that the complaint failed to allege that he had committed any act prohibited by the terms of the statute and therefore stated no public offense against him. The offense denounced by section 8½ is that of the furnishing by a physician to his patient of more than 4 grains of morphine as a daily treatment, and the complaint in apt language charged that offense, which was all that was required. If there were any exceptions to this rule within which the petitioner might come and thus excuse himself from the charge so alleged, he might show such excuse as a matter of defense. The complaint accordingly was sufficient and not subject to the attack that it did not state a public offense.

In short, the complaint charged him with a violation of section 8½—that is, furnishing more than 4 grains of morphine for one daily treatment—and if he committed the act thus charged the only condition under which he could be innocent of the offense so charged was by showing that he had administered the morphine to a person who had an incurable disease. It was his right to show as a defense that such exception applied to him, but it was not the duty of the prosecution either to plead or to prove that he was not within the permissive scope of such exception.

Skill Required in Obstetric Case—In the Country

(Mason v. Geddes (Mass.), 154 N. E. R. 519)

The Supreme Judicial Court of Massachusetts says that the defendant by the use of forceps delivered the plaintiff of her first child, as a result of which the plaintiff suffered an extensive tear of the perineum going through into the sphincter muscle. Eleven days later the defendant called a practicing surgeon to make arrangements to operate on the plaintiff to repair the tear, but the defendant decided that such operation should not be performed until three months later, and the surgeon testified that such delay was required under the circumstances. A nurse who was present when the child was delivered testified that during the operation the forceps slipped on the child's head; that the chair slipped from under the defendant and he fell to the floor; that he said he would not "sew her up then; that he would do it later. He said he did not feel equal to doing it. He said he felt tired and didn't want to do it at that time. He didn't say when he would do it." The hospital records showed that he was called at 1:40 a. m., and that the child was delivered fifteen minutes later. There was also evidence tending to show that much patience and time are required in the delivery of a child with the aid of forceps, and that with the first child it would require probably about an hour to do it properly.

Although the evidence tending to show negligence on the part of the defendant in the delivery of the child was meager, yet if the testimony of the nurse that the forceps slipped and that the chair occupied by the defendant while using them slipped from under him and he fell to the floor was believed, as also the evidence that he delivered the child in fifteen minutes, in connection with the other evidence, a finding of negligence was not unwarranted. It could have been found that either by carelessness in the use of the forceps, or by undue haste in the delivery of the child, or by both, the plaintiff received the injury complained of. The defendant was responsible to the plaintiff for failure to use the care and skill ordinarily possessed by members of his profession in the community where he practiced.

It was alleged that the defendant negligently failed to operate on the plaintiff seasonably. Several physicians, including the defendant, testified that an operation of that nature should not be performed immediately after childbirth, that it should be delayed for three months or more (for reasons given), and that by such delay better results would be obtained. A physician from Boston, called by the plaintiff, testified that an operation to repair the torn part should be performed as soon as possible. He was the only witness who so testified. On cross-examination he said that the tearing of the perineum and sphincter muscle sometimes happened without any fault of the physician; that it should be repaired at once if the condition of the patient was such that it could be safely done. He further testified: "I find reputable doctors whose opinions I ought to respect advise that repair operations be deferred," but he afterward said that he thought it perfectly reasonable that some physicians held a different opinion from his—he didn't know.

The plaintiff was entitled to have the question of the defendant's negligence considered on the aspect of the evidence most favorable to her, in considering whether a verdict should have been directed for the defendant on the count of the declaration regarding the delay. If negligence for failure immediately to repair the tear was to be found, it must rest on the testimony of the Boston physician alone. If the jury believed his testimony that the operation should have been performed immediately after the delivery of the child there

was no evidence that the delay was harmful to the plaintiff or that such delay was evidence of negligence. In his direct examination he was asked: "Would you say that the reasonable probabilities are that if it was taken care of right away you would be able to get a better union than you would if it was postponed?" His answer was, "As good at least." On this testimony it did not appear that the delay resulted in a different condition than if the repair operation had been performed at once. To hold otherwise would allow the jury to determine the question of the negligence of the defendant merely on speculation or conjecture. The medical skill required of a physician in a large city cannot be regarded as the test of the professional qualifications required of a physician in the country. Physicians called by the plaintiff and by the defendant, practicing in the town and vicinity where the defendant practiced, testified that his treatment was proper. If this evidence was not credited by the jury, still there was no evidence warranting a finding that the defendant failed to exercise the skill ordinarily possessed by members of his profession in that town or in that locality. It followed that a refusal to direct a verdict for the defendant on the count in question was error.

Evidence as to Existence of Disease at Given Time

(Scharlach v. Pacific Mut. Life Ins. Co. (U. S.), 16 Fed. R. (2d) 245)

The United States Circuit Court of Appeals, fifth circuit, in affirming a judgment for the defendant on this second appearance before it of this action on two policies of life insurance, where it was contended that the insured was not in good health when the policies were delivered to him, says that a cancer disclosed by an operation may not be evidence sufficient to support a finding as to how long it had existed, and at the same time be conclusive proof that it had been in existence several months. Where the disease in question is one the existence of which at a given stage of it is not discoverable, even by a skilled physician, except by ascertaining existing symptoms and making an examination of the blood of the person in question, a finding by a physician, based on such an examination, that that person has such disease, cannot well be said to be put in issue or impeached by a finding of the absence of disease by another physician, who made no such examination, and from whom the symptoms suggesting such examination were concealed; or by testimony, based only on observation of such person's outward appearance, that he then seemed to be in good health. Obviously, such evidence lacks probative value, where the question is whether a person has, or is free from, a disease or ailment which is not discoverable by merely observing the outward appearance of that person.

Medical Expenses as Evidence in Negligence Cases

(Alt v. Konkle (Mich.), 211 N. W. R. 661)

The Supreme Court of Michigan says, in relation to the admission of evidence of the amounts charged and paid for medical and surgical treatment, nursing and hospital service, in an action to recover damages for personal injuries caused by negligence of the defendant, that some of the Michigan cases stress the value of the expenditures as the thing to be proved. In others, it is the actual outlay or amount of expense. The value of the outlays or expenses is not alone the test. Nor is the total of the amounts actually paid out. A plaintiff may have had value for his expenditures, the amounts may have been actually paid, or liability incurred, and still, in part, at least, may have been unnecessary. The plaintiff is entitled to recover a reasonable sum, necessarily expended; or, as it has been held, "his reasonable and necessary outlays in an attempt to be cured of the injuries resulting from the negligence of the defendant." A plaintiff may show, in these cases, the sums actually paid or to be paid, but to recover such sums he should adduce evidence that the same are reasonable in amount and that the expenditures were necessary, for he may recover no more than the reasonable value of such of the same as were necessary. If the medical service, etc., have not been paid for and liability therefor has not been determined by account stated, or otherwise, and if the same have been furnished under circumstances entitling the plaintiff to recover therefor, he may show reasonable value and recover for such as were necessary. The evidence in this case showed that the medical and surgical attention, nursing and hospital service were necessary. Although there is respectable authority to the contrary, this court holds that the fact that these bills and charges for services, shown to have been rendered, had been paid in full was some evidence of their reasonableness, and that there was no error in refusing to strike out such evidence on the ground that it was not admissible without proof that the charges were reasonable and necessary.

Leaving Hospital Too Soon and Refusing Operation

(Consolidated Coal Co. v. Crislip et al. (Ky.), 289 S. W. R. 270)

The Court of Appeals of Kentucky, in affirming a judgment which affirmed an award of the workmen's compensation board in favor of plaintiff Crislip of $15 a week during total disability, not to exceed $6,000, says that he, during the course of his employment as a coal loader, sustained an injury to his left hip. He testified that after he had been in a hospital for twenty-three days the physician who had charge of his case told him that he could go home if he had crutches; that while he was at the hospital the physicians told him that he had no fracture of the hip, but had merely sustained an injury to the muscles and ligaments, and that use would probably help him. A roentgenogram taken then was some time afterward examined by physicians who contended that his hip was fractured, and that, if he had remained in the hospital and had not used his hip, he would have made a complete and perfect recovery. As it was, his leg was shortened an inch and a half or more, and his hip was stiff. But it could not be said that his failure to remain in the hospital was an unreasonable refusal, failure or neglect to submit to or follow competent surgical treatment or medical aid or advice, as he said he was advised to leave the hospital and to use his leg, and no one denied that. There was evidence that this was a very unwise thing to do, but, wise or otherwise, it was what he was told to do by the physician or surgeon who had his case in charge, and the defendant could not be relieved because, in the light of subsequent developments, it had been found that the plaintiff's hip was fractured, and that, by use of it before the fracture had healed, the shortening and other bad results were produced.

While the plaintiff may have unfortunately used his leg too soon, it could not be said that he carelessly did so, for he used his leg on the advice of and in the manner directed by the physician and surgeon in charge of his case and of the hospital where he was being treated. His experience showed plainly that the use of his leg then was a mistake. He knows now that was not the proper thing to do, but there was nothing to show that he knew so then. No one disputed that, except a physician who in his deposition said, "It was common talk around the hospital that somebody gave Crislip a pair of crutches and he slipped off from the hospital and walked home." But common talk is not evidence in a case like this.

It was suggested that by an operation it might be possible to relieve the stiffness of the joint. The evidence was that this was a very serious operation, and that, if the stiffness was due to some intracapsular trouble it would be impossible to relieve that condition, while if the stiffness was due to some extracapsular trouble, the operation might probably relieve the stiffness. The plaintiff declined to submit to such an operation. The court, however, does not agree with the suggestion that the plaintiff should submit to an operation and that, as he refused to do so, the defendant should be relieved from paying further compensation under the workmen's compensation act of that state.

Nor does the court agree with the contention that the defendant should be relieved from paying further compensation because it had already paid $2,423.56, and the plaintiff still had his leg, whereas the maximum allowance for the loss of a leg was $2,400, so that the defendant had already paid for the injury to the leg more than it would have had to pay if the leg had been amputated. That was true, but this award was made to the plaintiff, not for the loss of a leg, but for loss of his ability to work. The weight of the evidence and the finding of the board was that he was totally disabled.

The next question was, What did the legislature mean by the expression "total disability for work"? The court did not find a definition of the identical phrase, but it found one of a phrase which meant the same thing. That was in *Moore* v. *Peet Bros. Mfg. Co.*, 99 Kan. 443, 162 Pac. 295, where the court, having for definition the expression "total incapacity for work," said: "One who is disqualified from performing the usual tasks of a workman in such a way as to enable him to procure and retain employment is ordinarily regarded as totally incapacitated." That definition of that phrase by that court seems to this court to be the correct definition of the phrase before it.

Jurisdiction of Suit Against Employer for Services

(Knox Stove Works v. Hodge (Tenn.), 289 S. W. R. 505)

The Supreme Court of Tennessee says that plaintiff Hodge, having treated an employee of the defendant for injuries sustained under such circumstances as to render the defendant liable under the workmen's compensation act of Tennessee, brought suit before a justice of the peace to recover for such professional services, and obtained a judgment against the defendant for $28, which the circuit court affirmed, and the supreme court thinks correctly affirmed. But, while the court may very well have concluded from the evidence that the plaintiff was regularly retained by the defendant to render medical attention to such of the employees of the latter as were hurt in the course of their employment, and that the defendant had undertaken to assume liability for such services, and counsel for the defendant had stated that the defendant would concede everything necessary to a recovery by the plaintiff against the defendant, except the question of jurisdiction, the defendant denied the jurisdiction of a justice of the peace to entertain such a suit. That denial of jurisdiction was based on section 32 of chapter 123 of the acts of 1919—the workmen's compensation act—conferring jurisdiction of controversies with reference to compensation under this act between the employer and the employee on the judge or chairman of the county court, the circuit, criminal or chancery court concurrently, and based on the provisions of the first and last paragraphs of section 25 of the act. The first paragraph of section 25 deals with the case in which the employer undertakes to furnish medical treatment, and the second with the case of an emergency or the failure of the employer to provide treatment, in which the employee or his dependents provides it. Both say, in effect, that all cases of dispute as to the value of such services shall be determined by the tribunal having jurisdiction of the claim of the injured employee for compensation.

Where the employee or his dependents seek to recover of the employer expenses on such account, the dispute is obviously to be determined by the tribunal having jurisdiction of the matter of compensation to the employee or his dependents. The provision in the first paragraph, this court thinks, has reference to a dispute between the employee and the employer as to whether the employer has furnished medical services, etc., equal to the requirements in the context.

It is not, in the opinion of the supreme court, the intention of chapter 123 to prevent an employer from making a contract with a competent physician to look after the injured employees of such employer. Nor does the court think it was the intention of the act to deal with controversies between such employer and such physician with respect to their rights under such contract. The jurisdiction specially conferred on the various courts was of disputes with reference to "compensation under this act between the employer and employee or the dependents of the employee."

If the employee should sue for the value of medical services that he procured for himself, under the last paragraph of section 25, jurisdiction of such suit would be in the courts named in section 32. Likewise, if the employee should sue for the failure of the employer to furnish the medical services required of the employer by the first paragraph of section 25, jurisdiction of such a suit would be in the courts named in section 32. Both suits would involve, as a matter of fact, compensation to which the employee might be entitled under the act. Other similar cases can be supposed.

The suit before the court, however, was one of a physician for services rendered under a contract with an employer. There was here no controversy between employer and employee. The suit here did not rest on chapter 123 of the acts of 1919, but was based on a contract, and jurisdiction of such a suit lies in the same tribunals as have jurisdiction of a suit for a like amount on any other contract. The court does not find it necessary to express any opinion as to whether the attending physician of the injured employee, when no special contract existed between that physician and the employer, might maintain a direct suit against the employer for services rendered the employee. The proof here and the concession of counsel for the defendant made out a special contract. It followed from the foregoing that the justice of the peace before whom this suit was tried had jurisdiction thereof, and, as the case was submitted to the circuit court, that court could do nothing but affirm the magistrate's judgment. However, since the case was not one involving workmen's compensation, jurisdiction of this appeal in error was in the court of appeals, and an order would therefore be entered transferring the case to that court for formal affirmance.

Breaking Bones of Toes Not the Breaking of a Leg

(100% American Local Mut. Life & Accident Ass'n et al. v. Work et ux. (Texas), 289 S. W. R. 1020)

The Court of Civil Appeals of Texas, in reversing a judgment obtained by the plaintiffs, Work and his wife, says that the association issued a certificate of insurance to him providing for certain indemnity in the event that he should break an arm or a leg. It was alleged that he "accidentally broke one of his legs, to wit, one of the bones in the lower part of his leg." It was shown that a wagon ran over his right foot, breaking the bones in the big and second toes. The trial court, on the authority of *Rogers* v. *Modern Brotherhood of America*, by the Kansas City Court of Appeals, 131 Mo. App. 353, 111 S. W. 518, held the defendants liable and rendered judgment accordingly. In that case it was held that the fracture of the heel bone was protected by an accident policy which insured against breaking the leg. But, with due deference to that court, this court declines to follow its ruling. The contract here sued on agreed to indemnify in case the member "should break an arm or leg." There was nothing in the contract to indicate that the parties intended this language to be used in other than its plain, ordinary and popular sense. As such it means—as to the leg—a broken bone anywhere between the ankle and the hip, with the possible exception of the patella. A broken toe is not a broken leg, as those terms are commonly and universally understood and used. No one would ever think of referring to a broken toe as a broken leg. This court therefore holds that the injury of the insured was not protected by the certificate of insurance.

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Otolaryngology, Detroit, September 12-16. Dr. W. P. Wherry, Bankers Reserve Life Building, Omaha, Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Asheville, N. C., September 15-17. Dr. J. E. Davis, 111 Josephine Avenue, Detroit, Secretary.

American Electrotherapeutic Association, New York, September 12-16. Dr. Richard Kovacs, 223 East Sixty-Eighth Street, New York, Secretary.

American Roentgen Ray Society, Montreal, Canada, September 20-23. Dr. C. L. Martin, Baylor Hospital, Dallas, Texas, Secretary.

Colorado State Medical Society, Glenwood Springs, September 6-8. Dr. F. B. Stephenson, Metropolitan Building, Denver, Secretary.

Idaho State Medical Association, Twin Falls, August 29-31. Dr. J. N. Davis, Kimberly, Secretary.

Missouri Valley Medical Society of the, Des Moines, Iowa, September 14-16. Dr. Charles Wood Fassett, 115 East Thirty-First Street, Kansas City, Mo., Secretary.

Oregon State Medical Society, Salem, September 1-3. Dr. F. D. Stricker, Medical Arts Building, Portland, Secretary.

Washington State Medical Association, Tacoma, August 29-31. Dr. C. H. Thomson, 508 Cobb Building, Seattle, Secretary.

Wisconsin, State Medical Society of, Eau Claire, September 21-23. Mr. J. G. Crownhart, 153 Oneida Street, Milwaukee, Executive Secretary.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

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American Journal of Ophthalmology, Chicago

10: 399-478 (June) 1927

Effect of Size of Stimulus on Size and Shape of Color Fields. C. E. Ferree and G. Rand, Bryn Mawr, Pa.—p. 399.
Myiasis with Chronic Degeneration of Cornea. R. E. Wright, Madras, India.—p. 411.
Cystic Phase of Glioma (Retinoblastoma). C. Pascheff, Sofia, Bulgaria. —p. 413.
Intra-Ocular Foreign Body Problems. P. S. Mertins, Montgomery, Ala. —p. 414.
Lens Expression Hook. F. O. Schwartz, St. Louis.—p. 416.
Visual Acuity and Color Perception of Railway Employees. H. Reim, St. Louis.—p. 418.
Ophthalmologic Internal Medicine. J. H. Gibbes, Columbia, S. C.—p. 421.
Eyes in Brain Localization. F. E. Brawley, Chicago.—p. 426.
Hereditary Optic Atrophy. J. E. Reeder, Sioux City, Iowa.—p. 429.
Associated Movement of Jaw and Upper Lid (Jaw Winking). E. L. Goar, Houston, Texas.—p. 431.
Conjunctivitis and Dermatitis Due to Butyn. F. H. Newton, Dallas, Texas.—p. 432.
Suppurative Tenonitis Arising from Dormant Corneal Infection. W. H. Crisp, Denver.—p. 433.

American Journal of Surgery, New York

2: 415-526 (May) 1927

Treating Fractures of Femur in Adults. N. W. Cornell, New York. —p. 415.
Multiple Fractures: Two Cases. F. Christopher, Evanston, Ill.—p. 422.
Thyroid. J. H. Means, Boston.—p. 425.
*Four Thousand Anesthesias in Thyroid Surgery. A. F. Renneker, Cincinnati.—p. 431.
Treatment in Acute Mechanical Intestinal Obstruction. H. B. Eisberg, New York.—p. 435.
*Inflammatory Conditions of Digestive Organs. A. L. Soresi, New York. —p. 443.
Roentgenography in Diagnosis of Gastro-Intestinal Perforation. M. H. Todd, Lynch, Ky.—p. 449.
Loop Operation for Paralysis of Adductors of Thumb. L. Mayer, New York.—p. 456.
Physical Therapy. W. L. Secor, Kerrville-on-the-Guadalupe, Texas.—p. 459.
Spontaneous Rupture of Deep Epigastric Artery: Two Cases. H. B. Epstein, Newark, N. J.—p. 462.

Anesthesia in Thyroid Surgery.—Renneker considers gas and oxygen with proper preliminary medication as the anesthetic of choice in thyroidectomy, although it is the most difficult to administer.

Inflammatory Conditions of Digestive Organs.—Soresi describes faulty anatomic conditions that cause and precede pathologic processes observed in the digestive organs, such as ulcers of the stomach and duodenum, carcinoma of the stomach, pancreatitis, duodenitis, cholecystitis and cholelithiasis, stenosis and obstruction of the intestine, acute and chronic appendicitis, and chronic constipation. He contends that micro-organisms would not cause any lesion if the faulty anatomic conditions described did not exist. In order to cure the pathologic conditions mentioned, the faulty anatomic structure must be corrected first.

American Journal of Syphilis, St. Louis

11: 165-336 (April) 1927

*Treatment of Neurosyphilis and Paresis with Malaria. H. Goldsmith and R. Rockwood, Baltimore.—p. 165.
Occurrence of Jaundice in Syphilitic Patients. N. Tobias, St. Louis.—p. 180.
*Headache: Syphilis as Possible Cause. C. B. Craig, New York.—p. 190.
*Accidental Syphilitic Infection in Physicians. O. Berghausen, Cincinnati.—p. 197.
*Superinfection with Spirochete of Syphilis; Case. H. M. Greene, Portland, Ore.—p. 200.
Syphilis of Epididymis. H. G. Greditzer, St. Louis.—p. 202.
*Case of Cerebrospinal Syphilis. F. R. Starky, Detroit.—p. 208.
Deep Pain Sense in Tabes Dorsalis (Locomotor Ataxia). J. W. Stephenson, New York.—p. 212.
*Syphilis of Nervous System. T. B. Throckmorton, Des Moines, Iowa. —p. 215.
*Intraspinous Injections of Sodium Iodide in Tabes Dorsalis. G. B. Lawson, Roanoke, Va.—p. 226.
Effects of Mass Treatment on Epidemiology of Treponematosis. C. S. Butler and R. P. Parsons, Haiti.—p. 228.
Effect of Formalin on Velocity of Wassermann Reaction. C. E. Reyner, New Haven, Conn.—p. 233.
Modern Tendencies in Syphilis Therapy. G. E. Slotkin, Buffalo.—p. 240.
Syphilis and Germ Plasm. H. M. Young, St. Louis.—p. 245.
Treponematosis in Rural Population of Haiti. C. S. Butler and E. Peterson, Haiti.—p. 251.
Atypical Syphilis—A. A. Crance, Geneva, N. Y.—p. 262.
Negative Wassermann: What Does It Mean? O. L. Mulot, New York. —p. 265.
*Value of Routine Spinal Fluid Analysis in Detecting Neurosyphilis. D. L. Kerlin, Shreveport, La.—p. 276.
Influence of Formalin on Wassermann Reaction. C. E. Reyner, New Haven, Conn.—p. 280.
Multiple Tabetic Trophic Disturbances: Case. J. Frischer and F. E. Diemer, Kansas City, Mo.—p. 288.
Microscopic Slide Precipitation Test for Syphilis. B. S. Kline and A. M. Young, Cleveland.—p. 290.
Neisser-Wechsberg Phenomenon of Complement Deviation in Wassermann Reaction. A. J. Hinkleman, Oklahoma City.—p. 295.
Relationship of Wassermann Reaction, Cells and Globulin-Content, and Colloidal Gold Precipitation Reaction of Spinal Fluids in Syphilitics. T. Thjøtta and H. Saethre, Oslo, Norway.—p. 306.

Malaria Treatment of Neurosyphilis.—Of fourteen patients treated by Goldsmith and Rockwood, eight, or 57 per cent, have been paroled and are working at their regular vocations; last reports show them to be doing very well.

Syphilis as Cause of Headache.—In the presence of persistent or recurrent headache with or without other symptoms, Craig says, organic disease of the central nervous system must be suspected until disproved.

Accidental Syphilitic Infection of Physicians.—The twenty-two instances of accidental syphilitic infections studied by Berghausen show clearly that the layman is more likely to be infected on the lip; hence, the health authorities should continue their campaign of instructing the general public to be careful in the use of sanitary drinking vessels in public places, and their supervision over barber shops and manicure parlors. The physician is more liable to accidental infection of the finger, and should therefore exercise precaution in all special examinations, and properly care for minor injuries of the fingers.

Superinfection with Syphilis.—Greene's patient had two proved chancres in two years. There was a definite history of exposure each time. Spirochetes were found in material obtained from the chancre, and the lesion rapidly resolved following the administration of sulpharsphenamine.

Cerebrospinal Syphilis.—The Wassermann reaction of the blood and spinal fluid was negative in Starky's case, but there was a high cell count and the response to antisyphilitic treatment justified a diagnosis of cerebrospinal syphilis.

Neurosyphilis.—In any unexplained group of symptoms referable to the nervous system, Throckmorton says, syphilis should always be thought of as a possible etiologic factor until ruled out by lack of clinical and serologic evidence.

Sodium Iodide Intraspinally in Tabes Dorsalis.—Three patients with far advanced general paralysis were treated by Lawson with sodium iodide intraspinally. The sodium iodide was used in gradually increasing doses until as much as 3 grains (0.2 Gm.) was given at one time. At first there was an improvement, but later on it was doubtful if there had been any permanent betterment in the condition. One young man with early general paralysis received similar treatment, and he appeared much improved both clinically and serologically.

Value of Routine Spinal Fluid Analysis.—Kerlin stresses the value of routine spinal fluid analysis in detecting neurosyphilis. Four cases in point are reported.

American Review of Tuberculosis, Baltimore

15: 521-632 (May) 1927

Social Importance of Heliotherapy in Surgical Tuberculosis. A. Rollier, Leysin, Switzerland.—p. 521.
*Surgical Treatment of Pulmonary Tuberculosis. G. Sayago, Cordoba, Argentine Republic.—p. 544.
*Factors Influencing Early Mortality Following Extrapleural Thoracoplasty. E. Archibald, Montreal.—p. 564.

*Treatment of Laryngeal Tuberculosis in Sanatoria. C. D. Parfitt, Gravenhurst, Ont.—p. 579.
Intestinal Tuberculosis. D. A. Stewart, Ninette, Man.—p. 588.
*Tuberculosis in Children. H. D. Chadwick, Westfield, Mass.—p. 601.
Significance of Cough Droplets and Dry Dust in Spread of Tuberculosis. F. Neufeld, Berlin.—p. 609.
Formation of Giant Cells in Tissue Cultures: Similarity to Those in Tuberculous Lesions. W. H. Lewis, Baltimore.—p. 616.
Experimental Tuberculosis in Rats on Varied Diets: III. Salt Factors. L. B. Lange, Baltimore.—p. 629.

Thoracoplasty for Pulmonary Tuberculosis.—Among fourteen typical thoracoplasties done by Sayago, four patients were cured and five were improved. There were two operative deaths, and in three cases death was due to progression of the tuberculosis and to other causes.

Factors Influencing Mortality of Thoracoplasty.—Archibald decries the one-stage operation, the removal of too many ribs or of too long portions of ribs, local anesthesia in large amounts, wound infection and cough during and soon after operation, which spreads the disease into the sound lung, as causes of an unnecessarily high mortality following extrapleural thoracoplasty.

Treatment of Laryngeal Tuberculosis.—Of 872 tuberculous patients reported on by Parfitt, 134 (15.4 per cent) had laryngeal tuberculosis and eighty-five (9.7 per cent) nontuberculous laryngitis. *B. tuberculosis* had been found in all but one of the patients with laryngeal tuberculosis. Parfitt advocates sanatorium residence for these patients, with voice rest and the use of the galvanocautery. Of the 134 cases, forty-five have been classified as apparently arrested or higher; thirteen as apparently cured; twelve as arrested; twenty as apparently arrested; seven as quiescent; twenty-one as improved, and sixty-one as unimproved. In isolated sanatoriums and in those not blessed by having an energetic laryngologist on the visiting staff, Parfitt says that a staff physician should be detailed to learn the technic of safe instrumentation and to treat the group of laryngeal cases with the galvanocautery. Treatment by cauterization has proved to be desirable in approximately 20 per cent of Parfitt's cases, and curative in 60 per cent of these. It has largely displaced less effective time-consuming methods, and more difficult and distressing cutting operations, with the exception of epiglottidectomy. Parfitt estimates that today there are in this country 25,000 patients with laryngeal tuberculosis for whom the galvanocautery is needed, more than half of whom should obtain an arrested laryngeal lesion by its use.

Tuberculosis in Children.—Chadwick's experience shows that an occasional case of pulmonary tuberculosis may be found in children at any age above 5 years, but not until the age of 14 does its incidence equal 1 per cent of the children examined. Further, the roentgen-ray evidence indicates that some of the cases of pulmonary disease in children extend from the hilum or from a partially calcified, primary focus in the parenchyma of the lung. In finding these cases, one cannot depend very much on the usual examination of the chest. The physical examination of the chest in children is of less importance than in adults; and, when râles are found in a child's chest, they are almost always due to some other condition than tuberculosis. In searching for such cases, therefore, one should do the cutaneous or intracutaneous test in all children, and then examine all the reactors with the roentgen ray. By so doing, the latent, as well as the active cases, will be brought to light.

Annals of Clinical Medicine, Baltimore

5: 913-991 (April) 1927

Treatment of Peptic Ulcer. F. Smithies, Chicago.—p. 918.
Use and Abuse of Iodine in Treatment and Prevention of Goiter. D. Marine, New York.—p. 942.
Direct Sunlight in Treatment of Tuberculosis. S. H. Watson, Tucson, Ariz.—p. 950.
*Thyroid Extract in Management of Pleural Effusions. C. S. Danzer, New York.—p. 959.
*Pernicious Anemia. G. G. Richards and L. L. Daines, Salt Lake City.—p. 966.
Chronic Arthritides from Standpoint of Etiology and Management. W. C. Stoner, Cleveland.—p. 972.

Thyroid Extract in Treatment of Pleural Effusions.—Seven cases of pleural effusion were treated by Danzer with thyroxin or desiccated thyroid. Three of the cases were of a primary tuberculous nature, and the remainder occurred in the course of pneumonia. In six cases there resulted a very marked reduction in the quantity of fluid after from four to twelve days of thyroid feeding. The parapneumonic effusions reacted better to thyroid than did those of tuberculous origin. It is suggested that thyroxin or active thyroid preparations be given patients with pleural effusion, especially when spontaneous reabsorption is delayed.

Dietetic Treatment of Pernicious Anemia.—Richards and Daines present a summary of a survey of fifty cases of pernicious anemia which they were able to follow during a period of ten years, and a preliminary report of the results obtained by dietetic treatment in twenty cases. In the first group the results from any treatment were entirely discouraging. The benefits from transfusions were often striking but only temporary. Splenectomy possibly prolonged the remissions. The end was fatal in all but three of the fifty cases. In the second group only two of the twenty cases have failed to show improvement. The diet consisted of from 150 to 175 Gm. protein, 200 to 250 Gm. fat and 75 Gm. carbohydrate, which is later increased to 110 Gm. To this from 1 to 1½ quarts of buttermilk is added. The food value of this diet will range from 2,500 to 3,500 calories. The proteins are derived from eggs, cottage cheese and buttermilk. The fats come largely from cream, butter, eggs, oil dressings and the meat fats. The carbohydrates consist mostly of from 5 to 10 per cent vegetables and fruits, especially oranges and grapefruit, and also of one cooked cereal and some whole wheat bread.

Annals of Surgery, Philadelphia

85: 641-800 (May) 1927

*Experimental Researches on Vasomotricity. R. Leriche and R. Fontaine, Strasburg, France.—p. 641.
*Suture of Wounds of Heart. W. H. Cole, St. Louis.—p. 647.
Pericardial Decompression in Treatment of Wounds of Heart After Cardiorrhaphy. J. C. O'Day, Honolulu, Hawaii.—p. 653.
Purulent Pericarditis in Childhood. E. G. Williamson, Philadelphia.—p. 659.
Phlegmonous Gastritis. J. C. A. Gerster, New York.—p. 668.
Benign Hypertrophy of Stomach and Linitis Plastica: Two Cases. K. Dwight, New York.—p. 683.
*Effect on Jejunal Mucosa of Transplantation to Lesser Curvature of Stomach. G. de Takats and F. C. Mann, Rochester, Minn.—p. 698.
Acute Dilatation of Stomach Occurring Under General Anesthesia. M. A. McIver, Boston.—p. 704.
Causes of Death Following Operations for Perforated Gastric and Duodenal Ulcers. J. B. Stenbuck, New York.—p. 713.
*Tumors of Cecum. J. F. Erdmann and H. E. Clark, New York.—p. 722.
Advantages of Low Median-Line Incision in Exploratory Laparotomy for Carcinoma of Rectum or Rectosigmoid. W. E. Sistrunk, Rochester, Minn.—p. 732.
Classification of Renal and Ureteral Anomalies. E. Papin, Paris, and D. N. Eisendrath, Chicago.—p. 735.
Spinal Anesthesia with Anhydrous Cocaine: Five Hundred and Fifty-Seven Cases. J. R. Wells, Philadelphia.—p. 757.
Use of Regional Anesthesia by Nerve Block Method for Reduction of Fractures and Dislocations. S. Mage, New York.—p. 765.

Vasomotricity.—The hypothesis offered by Lériche and Fontaine is that the place of production of the vasomotor actions which regulate the local circulations must be referred to the periphery.

Suture of Wounds of Heart.—Cole reports a case of stab wound of the heart. The wound in the left ventricle measured about 1 cm. by 2 cm. and was bleeding quite freely. Six or seven interrupted catgut sutures were applied before the wound could be closed and all bleeding suppressed. Despite a stormy convalescence, the patient made a complete recovery.

Fate of Jejunal Transplants.—Transplants of jejunum with intact blood supply, from the region where gastrojejunal ulcer develops following gastro-enterostomy in man, were made by de Takats and Mann into the lesser curvature of the stomach in dogs at the site where gastric ulcer usually occurs in man. A typical peptic ulcer developed in the transplant in a small percentage of instances. This fact appears significant, as ulcers did not develop when the transplant was made elsewhere in the gastric wall. The results of these experiments add more suggestive data to the hypothesis that mechanical stress is an important factor in determining the site of the formation of peptic ulcer.

Tumors of Cecum.—Forty-eight cases of cecal tumor were studied by Erdmann and Clark. Carcinoma was found in thirty-seven instances, tuberculosis in seven, chronic inflammation in two and lymphosarcoma in one; in one the diagnosis was undetermined. Other tumors occasionally found are cyst, gummas, lipomas, tuberculomas, papillomas, cholesteotomas, leiomyomas and actinomycosis. The ileocecal region is the site of predilection for tuberculosis, because of the right lymphatic supply. Regional glandular metastasis was found in 25 per cent of the cases reported. The ileocecal valve was involved in 48 per cent. The Friedrick operation was the method of choice, being performed in twenty-eight of the thirty-seven cases of carcinoma, with a mortality of 21.4 per cent.

Archives of Otolaryngology, Chicago

5: 385-468 (May) 1927

*Nature of Laryngeal Vibration. R. West, Madison, Wis.—p. 385.
*Intratracheal Inhalation: Method of Intratracheal Anesthesia. P. J. Flagg, New York.—p. 394.
*Pathologic Conditions of Ear, Nose and Throat in Diabetes. J. C. Beck and H. L. Pollock, Chicago.—p. 400.
*Nature of Progressive Deafness. S. J. Kopetzky, New York.—p. 404.
Salivary Calculus of Submaxillary Gland. A. J. Wagers, Philadelphia. —p. 411.
*Influence of Filtered Quartz Light on Nasal Ganglion. H. Meyersburg, New York.—p. 415.
Tonsils and Adenoids. A. W. Proetz, St. Louis.—p. 424.

Nature of Laryngeal Vibration.—West asserts that each cycle of laryngeal vibration consists of one complete movement of each of the two vocal bands, and these two movements are in opposite phase. Vocal sounds are controlled in pitch partly, at least, by the adjustment of the pharynx.

Intratracheal Inhalation.—A safe, improved and simplified intratracheal method for general anesthesia is offered by Flagg which may be generally employed for all operations about the head and neck. The method provides a dry, quiet, odorless field of operation, with increased safety to the patient, both from an anesthetic and from a surgical point of view.

Ear, Nose and Throat Complications of Diabetes.—The most frequently occurring complication found by Beck and Pollock in seventy-four cases was tonsillitis (thirty-one cases); next came deviated septum and hypertrophic turbinates (twelve cases); acute otitis media and mastoiditis (nine cases); suppurative rhinosinusitis (six cases), and chronic otitis media (five cases).

Nature of Progressive Deafness.—Kopetzky regards chronic progressive deafness as being a local manifestation of a general metabolic disorder, one which rarely, if ever, exists as an isolated entity. Judging by further observations on the calcium content of the blood in cases of deafness, he is certain of the value of the derangement of this element in establishing a diagnosis of chronic progressive deafness.

Influence of Quartz Light on Nasal Ganglion.—Meyersburg has found that filtered mercury vapor quartz light, properly applied, is followed by relief from symptoms in many cases of secretory and sensory disturbances of the nasal ganglion, but the effects thus obtained are not permanent in the seasonal secretory cases. A tolerance to ultraviolet rays is developed in the mucous membrane as in the skin. Too many treatments and too long exposures are to be avoided.

Archives of Pathology & Lab. Med., Chicago

3: 751-920 (May) 1927

*Origin of Histiocytes (Macrophages) in Lungs. B. M. Fried, Boston. —p. 751.
Microscopic Anatomy of Infantile Amaurotic Idiocy. R. R. Grinker, Chicago.—p. 768.
*Dynamics of Histogenesis in Cardiac Repair. O. C. Perkins and A. M. Miller, New York.—p. 785.
*Primary Sclerosis of Pulmonary Artery and Its Branches. C. M. Bacon and C. W. Apfelbach, Chicago.—p. 801.
*Follicular Lymphadenopathy with Splenomegaly. D. Symmers, New York.—p. 816.
Eosinophilia in Vermiform Appendix. E. F. Koch, New York.—p. 821.
Apparatus for Blood Counting. E. R. Serles, Brookings, S. D.—p. 828.

Origin of Histiocytes in Lungs.—The phagocytes or "dust cells" in the pulmonary alveoli in inflammatory and congestive processes, Fried says, are macrophages or histiocytes, and therefore cells of mesenchymal origin. These cells originate from the nucleated cells, commonly spoken of as the (respiratory) epithelial cells lining the wall of the pulmonary alveoli. The so-called epithelial cells lining the pulmonary alveoli are to all appearances not epithelial but cells of mesenchymal origin—that is to say, they are histiocytes, and belong to the reticulo-endothelial system.

Dynamics of Histogenesis in Cardiac Repair.—With increasing age but without cardiac or other vascular lesions, Perkins and Miller aver that there is an increase in the amount of elastic tissue in the different layers of the heart wall. Collagenous fibers may be transformed into elastic tissue in consequence of prolonged stress and strain on the connective tissue containing the collagenous elements.

Primary Sclerosis of Pulmonary Artery.—The clinical and anatomic characteristics of primary sclerosis of the pulmonary artery are described by Bacon and Apfelbach, and a report is made of one case that the authors believe is typical of this disease.

Follicular Lymphadenopathy with Splenomegaly.—The occurrence of a disease characterized by widespread or generalized enlargement of the lymph nodes, superficial, deep or both, attended by splenomegaly and characterized histologically by changes marked almost exclusively by numerical and dimensional hyperplasia of the germinal follicles, Symmers says, adds a new note to the pathologic possibilities of the lymphoid system and commands consideration from the aspect of diagnosis, since the disease in question, unlike those with which it is likely to be confounded clinically, is benign from the standpoint of prognosis, and promising from that of treatment.

Johns Hopkins Hospital Bulletin, Baltimore

40: 265-335 (May) 1927

Inactivation of Chicken Tumor Virus by Means of Carmine. M. R. Lewis and H. B. Andervont, Baltimore.—p. 265.
Passive Transfer of Hypersensitivity. L. N. Gay and E. Chant, Baltimore.—p. 270.
*Blood Guanidine in Tetania Parathyreopriva. R. H. Major, T. G. Orr and C. J. Weber, Kansas City, Kan.—p. 287.
*Significance of Hydrogen Ion Concentration for Colloidal Gold Test: New Method for Preparation of Colloidal Gold. O. Wuth and M. Faupel, Baltimore.—p. 297.
Effect of Thyroid Feeding on Spontaneous Activity of Albino Rat. G. H. Wang, Baltimore.—p. 304.
Technical Difficulties Encountered in Attempt to Produce Bacterial Mutations. J. H. Brown and M. Frobisher, Jr., Baltimore.—p. 318.

Blood Guanidine in Tetany.—In animals in which symptoms similar to those of tetany were produced by injections of guanidine compounds, Major et al. demonstrated an increase in the blood guanidine by the colorimetric method. Injections of guanidine compounds in doses insufficient to produce symptoms caused a demonstrable increase in the blood guanidine. In five dogs suffering from tetania parathyreopriva, no increase in blood guanidine could be detected. In one dog with tetania parathyreopriva, a slight increase in the color reaction occurred during one attack of tetany. In a later attack in the same dog, change was not observed.

Preparation of Colloidal Gold.—A new method for the preparation of colloidal gold is described by Wuth and Faupel which is based on the consideration of the hydrogen ion concentration and the addition of a protective colloid. It is shown that colloidal gold in "aging" becomes more alkaline and less active, and that therefore for the colloidal gold test colloidal gold should be freshly prepared.

Journal of Laboratory & Clin. Med., St. Louis

12: 735-836 (May) 1927

*Effect of Venous Stasis on Proteins of Blood Plasma and Sedimentation Rate of Erythrocytes. E. D. Plass and M. D. Rourke, Detroit. —p. 735.
Pathogenicity of Small Races of "Ameba of Dysentery." R. J. Pickard, San Diego, Calif.—p. 743.
*Corynebacterium Ulcerans: Resembling C. Diphtheriae. R. Gilbert and F. C. Stewart, Albany, N. Y.—p. 756.
*Relationship of Wassermann Reaction, Cells and Globulin Content, and Colloidal Gold Precipitation Reaction of Spinal Fluids in Syphilitics. T. Thjötta and H. Saethre, Oslo, Norway.—p. 762.
*Formaldehyde-Sulphuric Acid Reaction of Opium Alkaloids. V. E. Levine and E. A. Magiera, Omaha.—p. 773.

*Pharmacology of Iron and Aluminum in Relation to Therapeutic Uses. H. A. McGuigan, Chicago,—p. 790.
Accessory to Chambers Apparatus for Isolation of Single Bacterial Cells. W. H. Wright and E. F. McCoy, Madison, Wis.—p. 795.
Tungstic Acid Precipitation of Blood Proteins. M. Somogyi, St. Louis. —p. 800.
Comparison of Quantitative Methods for Blood Bilirubin. H. F. Shattuck, J. A. Killian and M. Preston, New York.—p. 802.
Preparation of Colloidal Gold Solution. R. A. Kilduffe and W. W. Hersohn, Atlantic City, N. J.—p. 810.
Modification of Icterus Index. R. Rockwood and A. Szczypinski, Baltimore.—p. 813.

Effect of Venous Stasis on Blood Proteins and Erythrocytes.—Plass and Rourke assert that prolonged venous stasis leads to blood dehydration and to an increase of plasma proteins. It is suggested that the lymph fluid has increased in protein content by diffusion of protein from the cytoplasm of the tissues which it surrounds, and that this lymph fluid, having become higher in protein than normal plasma, subsequently loses protein to the plasma, thereby increasing the total plasma proteins. The marked increase in fibrin during venous stasis points to reserve fibrin in the tissues. The sedimentation rate is increased by prolonged venous stasis, and it is suggested that the increase is probably due chiefly to increased fibrin. Care should be exercised in the use of the tourniquet or other constriction during the taking of blood on which the sedimentation rate or plasma proteins are to be determined.

Corynebacterium Ulcerans.—The micro-organism described by Gilbert and Stewart exhibits definite morphologic and cultural characteristics, some of which have been ascribed to certain micro-organisms previously reported. The name *Corynebacterium ulcerans* is proposed for this species. The first culture of *C. ulcerans* was isolated in January, 1920, from a patient who had had diphtheria the preceding October and had recovered clinically in December of that year. In subsequent cultures from this patient received in February and April, a similar bacillus was found. Since that time, thirty-six such strains from thirty-one different patients have been isolated during the course of the routine tests; in some cases, very little of the clinical history could be obtained. *Corynebacterium ulcerans* differs from the true diphtheria bacillus in some respects but is doubtless a closely related species. From the evidence of pathogenicity that the cultures manifest, it seems probable that it may be of etiologic significance in some of the inflammatory or ulcerative lesions, especially those of the nose and throat.

Effect of Syphilis Treatment on Spinal Fluid.—Thjötta and Saethre assert that the final criterion signifying that a spinal fluid in neurosyphilis has become normal during treatment must be either a negative Wassermann reaction or a colloidal gold reaction; or, better still, these two reactions occurring negative together.

Study of Opium Alkaloids.—The study made by Levine and Magiera leads to the conviction that many of the analytic procedures for organic poisons, used in toxicologic examination and offered in legal evidence, are in dire need of thorough revision and critical reevaluation.

Effect of Aluminum and Iron.—McGuigan says that as aluminum is used chiefly externally and for its astringent properties there is little likelihood of its misuse. When taken by mouth in moderate amounts, there is little danger of toxic effect because only traces are absorbed. There is no excuse for its use hypodermically, and it is only when used in this way that it is of toxic importance. While iron also is used locally as a styptic, its main use is as a hematinic. In view of the toxic effects recorded, it should not be given hypodermically unless the conditions demand it, and such an occasion is rare. Most solutions of iron are precipitated at the site of action; hence, they are highly irritant. Deep muscular injection does not lessen this effect but merely hides it. If soluble salts which do not readily cause precipitation are injected, they may be absorbed with sufficient rapidity to cause renal irritation or nephritis. In view of the toxic actions cited, and since there is no adequate evidence that the hypodermic use of iron salts is advantageous, the hypodermic method of administration of iron must be looked on as inadvisable and often harmful.

Journal of Nervous & Mental Dis., New York

65: 457-552 (May) 1927

Reflexes in Apes. G. D. Aronovitch, Leningrad, Russia.—p. 457.
Endocrine and Biochemical Studies in Schizophrenia. K. M. Bowman, Boston.—p. 465. C'td.
*Subarachnoid Hemorrhage from Medicolegal Point of View. W. Munck, Copenhagen.—p. 484.
Erotic Behavior of Idiots. H. W. Potter, Theilla.—p. 497.

Subarachnoid Hemorrhage Cause of Sudden Death.—Munck shows that the isolated subarachnoid hemorrhage can be the cause of sudden death. Nine such cases are on record. In cases of this type, it is often extremely difficult to determine whether the hemorrhages are spontaneous or of traumatic origin, as the pathologic-anatomic picture in the two cases can be perfectly alike, both after rather large injuries and quite small traumatisms.

Jour. Pharmacol. & Exper. Therap., Baltimore

31: 1-85 (May) 1927

*Comparative Anesthetic Efficacy of Iso-Amylethylbarbituric Acid and Diethylbarbituric Acid. E. E. Swanson and I. H. Page, Indianapolis. —p. 1.
Phytopharmacology: Effect of Digitalis Solutions on Growth of Seedlings. D. I. Macht and J. C. Krantz, Jr., Baltimore.—p. 11.
Preparation of Colloidal Lead. F. Bischoff and N. R. Blatherwick, Santa Barbara, Calif.—p. 27.
*Pharmacologic Action of Scillaren. P. De, Cambridge, Mass.—p. 35.
Pharmacologic and Therapeutic Properties of Alpha-Lobelin: On Respiratory Center. V. H. Norris and S. Weiss, Boston.—p. 43.
*Crystalline Insulin. J. J. Abel, E. M. K. Geiling, C. A. Rouiller, F. K. Bell and O. Wintersteiner, Baltimore.—p. 65.

Anesthetic Efficacy of Barbital.—The minimum fatal and effective doses of diethylbarbituric acid (barbital) and isoamylethylbarbituric acid have been compared by Swanson and Page in a large series of cats, rabbits and rats, and the discrepancies in the literature are summarized.

Action of Scillaren.—Scillaren is an active glucoside of squilla. De has found that it exhibits slight irritant properties in the alimentary canal, though probably less than those shown by digitalis. It is absorbed from the alimentary canal, and has relatively little effect on blood pressure. It exerts a digitalis-like action on the heart.

Crystalline Insulin.—Abel et al. describe a new short method for the preparation of crystalline insulin from crude extracts of a low rabbit unitage.

Laryngoscope, St. Louis

37: 313-391 (May) 1927

Headaches Due to Eye. W. G. Gillett, Wichita, Kan.—p. 313.
Nasal Aspect of Headaches. J. C. Braswell, Tulsa, Okla.—p. 317.
Headaches of Intracranial Origin. F. R. Teachenor, Kansas City, Mo. —p. 320.
Treatment of Obstructing Inferior Turbinates. M. L. Harris, New York. —p. 325.
Conservative Treatment of Optic Nerve Disturbance from Focal Infection. L. E. White, Boston.—p. 327.
Rhinolithiasis: Two Cases. A. Lobell, New York.—p. 337.
Case of Antral Sinusitis Complicated by Radium Poisoning. F. B. Flinn, New York.—p. 341.
Mucocele of Frontal Sinus: Case. W. T. Garretson, Detroit.—p. 350.
Fracture of Outer Table of Frontal Sinus. S. Stein, New York.—p. 355.
Combined Ludwig's Angina, Agranulocytic Angina and Septicemia. V. K. Hart, Statesville, N. C.—p. 357.
Cyst of Larynx and Lobus Azygos of Lung: Case. H. C. Rosenberger, Cleveland.—p. 360.
Suppurative Labyrinthitis: Serous Meningitis: Recovery. R. T. Atkins, New York.—p. 366.
Mastoiditis with Gradenigo Syndrome: Before Operation: Following Operation. J. D. Whitham, New York.—p. 368.
Cavernous Sinus Thombosis, Associated with (1) Acute Purulent Otitis Media; (2) Mastoiditis. W. C. Bowers, New York.—p. 372.
Tuberculous Mastoiditis. T. R. Chambers, Hamilton, Bermuda.—p. 377.
Improved Hypophyscope. W. H. Barnes, Philadelphia.—p. 379.
Antrotomy Knife and New Antrum Cannula. E. M. Schwartz, New York.—p. 380.

Maine Medical Association Journal, Portland

18: 83-104 (May) 1927

Ineffectiveness of Medical Practice Acts. W. C. Woodward, Chicago. —p. 87.

Medical Journal and Record, New York

125: 585-652 (May 4) 1927

Correction of Nasal Disfigurements by Readjustment of Nasal Tissues. J. E. Sheehan, New York.—p. 585.
Cancer: XV. Predisposition. W. Meyer, New York.—p. 589.

Roentgen Rays, Radium, Endothermy and Other Physical Agents in Dermatology. J. J. Eller, New York.—p. 593.
Aortic Aneurysm Simulating Spontaneous Pneumothorax. H. F. Gammons, Booneville, Ark.—p. 595.
Treatment of Hernia by Subcutaneous Injection: Historical Review and Description of Author's Method. I. Mayer, Detroit.—p. 596.
Metabolic Aspects of Infectious Diseases. L. Berman, New York.—p. 598.
Diseased Mastoid as Source of Focal Infection. H. Dintenfass, Philadelphia.—p. 600.
Modification in Technic of Roentgen-Ray Examinations of Gastro-Intestinal Tract. J. F. Montague, New York.—p. 602.
Alleged Mental Abnormality in Pulmonary Tuberculosis. S. A. Knopf, New York.—p. 604.
Electric Breast Pump. E. M. Tarr, Los Angeles.—p. 607.
Clinical Value of Celluloid Capsule. J. Buckstein.—p. 610.
Importance of Transference in Child Hygiene. J. H. Cassity, Washington, D. C.—p. 611.
Medical Phases of Child Behavior. I. S. Wile, New York.—p. 613.
Chest Examination in Infants and Children. J. H. Marcus, Atlantic City, N. J.—p. 618.
Structural and Functional Predisposition to Disease. A. Hymanson, New York.—p. 620.
Growing Tendency Among Modern Mothers to Feed Their Babies Artificially. C. L. Larkin, Waterbury, Conn.—p. 624.
Incidence of Rachitis in Breast-Fed Infants. C. E. Macke, Baltimore.—p. 625.
Pepys and Plague. W. C. Rucker, New Orleans.—p. 627.

Minnesota Medicine, St. Paul

10: 267-340 (May) 1927

Prognosis in Heart Disease: Coronary Disease. F. A. Willius, Rochester, Minn.—p. 267.
Retroperitoneal Lipoma: Three Cases. C. H. Mayo and C. F. Dixon, Rochester, Minn.—p. 272.
*Zinc Stearate Insufflation. E. D. Anderson and E. H. Hilbert, Minneapolis.—p. 276.
Significance of Certain Signs and Symptoms in Cases of Surgical Mastoiditis. H. I. Lillie, Rochester, Minn.—p. 280.
Evolution of Nephritis: III. H. O. Altnow, Minneapolis.—p. 283.
*Multiple Perforated Gastric Ulcers. J. C. Masson and H. E. Simon, Rochester, Minn.—p. 289.
Hospital Library Service. R. O. Beard, Minneapolis.—p. 295.

Zinc Stearate Insufflation.—Eight cases of zinc stearate aspiration are reported by Anderson and Hilbert. In many instances only the larynx is involved, the cases are not fatal and are of rather short duration. If the zinc stearate reaches the bronchi, it causes a severe bronchitis which may develop into a bronchopneumonia. If the powder reaches the lung tissue, it may cause a severe bronchopneumonia. The symptoms arising from zinc stearate aspiration are probably due to both the mechanical and the toxic effects of the powder.

Multiple Perforated Gastric Ulcers.—Masson and Simon review thirty-two cases of multiple gastric ulcers reported in the literature, and report one case from the Mayo Clinic.

New Orleans Medical and Surgical Journal

79: 797-876 (May) 1927

Altruism of Organized Medicine. S. M. Blackshear, New Orleans.—p. 797.
Relation of Reticulo-Endothelial System to Splenomegalies Associated with Nonspecific or Secondary Anemia. A. O. Whipple, New York.—p. 800.
Nonspecific Upper Respiratory Infection in Children. W. R. Graves, Memphis, Tenn.—p. 826.
Complications Incident to Operative Treatment of Inflammatory Diseases of Gallbladder. A. P. Heineck, Chicago.—p. 830.
*Intestinal Complications of Pulmonary Tuberculosis. J. O. Lisenby, New Orleans.—p. 840.
Use of Lipiodol in Bronchi. P. H. Jones, Jr., and C. Jamison, New Orleans.—p. 844.

Intestinal Complications of Pulmonary Tuberculosis.—Lisenby analyzed 264 autopsies done in cases of pulmonary tuberculosis. Intestinal complications were found least often in white males. Only twenty cases, or 21 per cent, showed intestinal complications, while of the 172 colored patients, sixty-three, or 23 per cent, showed intestinal complications.

Ohio State Medical Journal, Columbus

23: 351-446 (May) 1927

Surgical Treatment of Gastric and Duodenal Ulcers. M. E. Blahd, Cleveland.—p. 371.
Roentgen Ray in Treatment of Skin Disease: Acne Vulgaris. J. E. Fisher, Cleveland.—p. 374.
Incidence of Temperature Elevation in Puerperium. J. L. Reycraft, Cleveland.—p. 378.
Kahn Test in Diagnosis of Syphilis. F. Berry, Columbus.—p. 381.

Oklahoma State Med. Assoc. Journal, Muskogee

20: 86-116 (April) 1927

Ablatio Placentae. E. O. Barker, Guthrie.—p. 86.
Conduct of Average Obstetric Case. C. R. Hannah, Dallas, Texas.—p. 88.
Treatment of Pelvic Infection. A. C. Hirschfield, Oklahoma City.—p. 92.
Puerperal Eclampsia. D. F. Stough, Geary.—p. 94.
Roentgen-Ray Study of Nasal Accessory Sinuses. E. C. Wilson, Oklahoma City.—p. 95.
Fractures of Femur. H. D. Murdock, Tulsa.—p. 97.
Fractures of Elbow Joint. I. N. Tucker, Tulsa.—p. 99.

20: 117-160 (May) 1927

Where Do We Belong in Scheme of Things? L. C. Williams, Pawhuska.—p. 121.
History and Progress of Gynecology. A. W. Pigford, Tulsa.—p. 123.
Cavernositis. F. E. Warterfield, Muskogee.—p. 126.
Obstruction in Upper Third of Nose in Childhood. C. H. Haralson, Tulsa.—p. 129.
Protecting Child's Health. C. V. Rice, Muskogee.—p. 130.

Philippine Islands Med. Assoc. Journal, Manila

7: 109-142 (April) 1927

*Negative Lepers: I. Persistence of Bacilli in Deep Foci. E. V. Pineda, Culion, P. I.—p. 109.
*Id: II. Nasal Lesions. H. W. Wade and F. Solis, Culion, P. I.—p. 111.
*Id: III. Relapses. H. W. Wade and C. B. Lara, Culion, P. I.—p. 115.
Factors in Treponematous Infection That Influence Result of Wassermann Reaction. O. Schöbl, Manila, P. I.—p. 122.

Negative Lepers.—The fact that ten out of eleven cases on the negative list were found bacteriologically positive at autopsy in smears from deeper organs, and that in nine out of fifty-three cases smears of material aspirated from the femoral lymph nodes were positive, Pineda says, is in accord with the generally recognized fact that lepers are not necessarily bacillus-free when they become negative by ordinary methods of examination. The skin and, apparently, the spleen and the liver become negative comparatively early; while in other sites, especially the nerves, lymph nodes and testes, the infection tends to persist for a relatively long time.

Nasal Lesions in Leprosy.—Special attention is called by Wade and Solis to the importance of examining the nasal mucosa in cases becoming or having become negative under treatment. Of 600 first examinations of negative candidates, in which both skin and nasal mucosa were tested, 152 were postive from the nasal mucosa and twenty-seven were positive from this region only. Of 570 negative or nearly negative patients, fifty-five were positive from the septum. Of them twenty-nine were positive only from the septum.

Relapses in Negative Lepers.—Data on supposed relapses in negative cases at the Culion Leper Colony are given by Wade and Lara. Of 508 persons on the negative list, seventy-five (15 per cent) had suffered interruption because later they were found bacteriologically positive. Of sixty-four of these, 55 per cent did not show clinical evidence of reactivation.

Physical Therapeutics, Baltimore

45: 221-262 (May) 1927

Treatment of Fibroids and Abnormal Uterine Bleeding Due to Benign Diseases with Radium and Roentgen Rays. J. T. Stevens, Montclair, N. J.—p. 221.
Radium and Cancer of Cervix Uteri. F. de Courmelles, Paris.—p. 230.
Roentgen Rays in Treatment of Pyorrhea Alveolaris. M. A. Lyons, New York.—p. 235.
Thymoma. T. H. Plank, San Francisco.—p. 240.
Medical Act of Canada and Canadian Electrotherapeutic Association. S. Lafortune, Montreal.—p. 243.
Progress in Phototherapy and Apparatus. F. T. Woodbury, New York.—p. 245.
Clinical Experiences with Diathermy. J. Hunter, Toronto.—p. 254.

Public Health Journal, Toronto

18: 151-200 (April) 1927

Pure Milk Supply for Farm Home. R. G. Ferguson.—p. 151.
Montreal Antituberculosis and General Health League. A. G. Fleming.—p. 156.
Antisyphilitic Pharmacopeia of Fracastorius. W. R. Riddell.—p. 171.
Mother's Duty to State. A. M. Plumptre.—p. 178.
Sanitation and Public Health Laboratory. A. J. Slack.—p. 182.

18: 201-230 (May) 1927

Diphtheria Toxoid as Immunizing Agent. J. G. FitzGerald.—p. 201.
Antenatal Clinics in England and France. R. George.—p. 210.
Economics of World Health. L. I. Dublin.—p. 216.
Antisyphilitic Pharmacopeia of Fracastorius. W. R. Riddell.—p. 226.
Evolution of Knowledge of Diphtheria. C. J. Hastings.—p. 231.
Improvement of Health in Rural Municipalities. J. W. S. McCullough.—p. 235.

Public Health Reports, Washington, D. C.

42: 1097-1150 (April 22) 1927

Water Supplies on Canadian Great Lakes Vessels. G. H. Ferguson, Fort Qu'Appelle, Sask.—p. 1097.
Screening Studies in Leflore County, Miss. C. P. Coogle, Greenwood, Miss.—p. 1101.

42: 1151-1215 (April 29) 1927

Pasteurization: Its Enforcement. L. C. Frank, F. J. Moss and P. E. LeFevre, Washington, D. C.—p. 1152.
Extent of Rural Health Service in United States, 1923-1927. L. L. Lumsden, Washington, D. C.—p. 1163.

42: 1217-1297 (May 6) 1927

Typhoid Epidemic in Grafton, West Virginia, During Winter of 1926-1927. E. S. Tisdale.—p. 1217.
Résumé of Literature Relating to Posture. L. Schwartz, Washington, D. C.—p. 1219.

42: 1299-1353 (May 13) 1927

*Pellagra Preventive Action of Tomato, Carrot and Rutabaga Turnip. J. Goldberger, Washington, D. C., and G. A. Wheeler, Milledgeville, Ga.—p. 1299.
*Nontuberculous Granulomatous Lymphadenitis in Mississippi. M. A. Barber, Memphis, Tenn., and C. P. Coogle, Greenwood, Miss.—p. 1306.

Tomatoes Prevent Pellagra.—Goldberger and Wheeler found tomatoes to be effective as pellagra preventives, while both carrots and rutabagas seem to lack this property. The idea suggested by the work of Underhill and Mendel on the Chittenden and Underhill syndrome (black tongue) in dogs, that carrots might be highly potent pellagra preventives, does not seem to be borne out by the results of this study. Carrots contain the black tongue preventive factor, but in relatively small amounts. They recommend the use of tomatoes in the treatment of active cases, in which it may be administered in the fresh, raw state, in the form of the juice, or as a soup. The daily quantity should be as liberal a one as is permitted by the digestive condition of the patient. A liter (1 quart) a day of the juice is not too much. In endemic localities a more liberal use of tomatoes than now obtains, particularly during the late winter and spring, may well be encouraged as a measure tending to the prevention of the disease.

Nontuberculous Granulomatous Lymphadenitis.—Five, possibly seven, cases apparently of nontuberculous granulomatous lymphadenitis were found by Barber and Coogle in Mississippi during the autumn or early winter of 1925. All were found in the same neighborhood, within a radius of perhaps 5 miles. Precise evidence of the origin of the infection could not be obtained. There was no history in any of the cases of recent residence outside of Mississippi. Extirpation of the diseased glands, or drainage alone, was followed by recovery.

Radiology, St. Paul

8: 369-460 (May) 1927

Use of Roentgen Rays in Study of Physiology. W. J. Meek, Madison, Wis.—p. 369.
Teaching Roentgenology to Undergraduates. E. S. Blaine, Chicago.—p. 374.
Postgraduate Instruction in Roentgenology. P. M. Hickey, Ann Arbor, Mich.—p. 379.
Use of Radiology in Teaching Anatomy. C. R. Bardeen, Madison, Wis.—p. 384.
Studies in Physics of Roentgen Rays for Medical Students. G. A. Lindsay, Ann Arbor, Mich.—p. 387.
Undergraduate Instruction in Roentgenology. J. J. Clark, Atlanta, Ga.—p. 394.
Developmental Study of Nasal Accessory Sinuses. W. W. Wasson, Denver.—p. 398.
Bone Diseases in Infants and Children. P. Lewin and E. L. Jenkinson, Chicago.—p. 409.
Radium in Treatment of Mammary Carcinoma. J. Muir, New York.—p. 416.
Normal Pyelograms: Value of Bilateral Simultaneous Pyelography. D. N. Eisendrath and R. A. Arens, Chicago.—p. 422.
Physical Characteristics and Physiologic Effects of High Frequency Currents. A. Mutscheller, New York.—p. 427.
Examination of Mastoids by Using Serial Plate Changer. S. W. Donaldson, Ann Arbor, Mich.—p. 437.
Easy Method for Making Surface Casts to Hold Radium Tubes in Position. W. H. Cameron, Pittsburgh.—p. 438.
Mediastinal Teratoma: Case. H. W. Grimm, Pittsburgh.—p. 438.
Method for Knowing Face of Plate Taken in Cassette. T. D. Cantrell, Bloomington, Ill.—p. 439.

Society Exper. Biol. & Med. Proc., New York

24: 627-732 (April) 1927

*Secondary or Compensatory Hypoglycemia. V. E. Levine, Omaha.—p. 627.
*Influence of Thyroid on Experimental Rickets. M. M. Kunde and L. A. Williams, Chicago.—p. 631.
Microbic Dissociation: Tubercle Bacillus. S. A. Petroff.—p. 632.
Bacteriophage Active Against Virulent Hemolytic Streptococcus. P. F. Clark and A. S. Clark, Madison, Wis.—p. 635.
Improved Colorimetric Method for Determining Quantitatively Indophenol Oxidase Content of Animal Tissues. J. A. Dye, Ithaca, N. Y.—p. 640.
Indophenol Oxidase Content of Normal and Scorbutic Guinea-Pig's Tissues. J. A. Dye and R. A. Waggener, Ithaca, N. Y.—p. 643.
Action of Bacteriophage on Low Temperature Bacterium. A. L. Elder and F. W. Tanner.—p. 645.
Preserving Supravital Staining with Neutral Red in Paraffin Sections of Lung. L. U. Gardner, Saranac Lake, N. Y.—p. 646.
Phytophysiologic Examination of Hemophilic Blood. D. I. Macht and G. D. Rowe, Baltimore.—p. 649.
Nonsensitizing Protein Antigens. W. H. Manwaring, H. D. Marino, T. C. McCleave and T. H. Boone, San Francisco.—p. 650.
Erythrocyte Anaphylaxis in Dogs. W. H. Manwaring, H. D. Marino and T. H. Boone, San Francisco.—p. 651.
Effect on Electrocardiogram of Opening Thorax and Inserting Optical Manometers into Aorta and Pulmonary Artery. L. N. Katz, Cleveland.—p. 652.
*Experimental Thrombosis. T. Shionoya, W. R. Johnson and L. G. Rowntree, Rochester, Minn.—p. 655.
*Effect of Iodine on Heat Production. D. Marine, M. Deutch and A. Cipra, New York.—p. 657.
Effect of Ergotamine Tartrate on Heat Production of Normal and Thyroidectomized Rabbits. D. Marine, M. Deutch and A. Cipra, New York.—p. 662.
*Feeding Certain Liver Constituents in Pernicious Anemia. R. West, New York.—p. 665.
*Metabolism of Acetic Acid in Phlorhizin Diabetes. A. T. Milhorat and H. J. Deuel, Jr., New York.—p. 667.
pH Concentration of Intestinal Contents of Dog: Inorganic Metabolism. D. M. Grayzel and E. G. Miller, Jr., New York.—p. 668.
Biochemical Studies of Human Semen and Mucin of Cervix Uteri: I. R. Kurzrok and E. G. Miller, Jr., New York.—p. 670.
Weight of Mouse Embryos Ten to Eighteen Days After Conception: Logarithmic Function of Embryo Age. E. C. MacDowell and E. Allen, New York.—p. 672.
*Pathogenic Anaerobic Bacillus Not Hitherto Described Cultured from Fatal Operative Wound Infection. F. L. Meleney, F. B. Humphreys and L. Carp, New York.—p. 675.
*General and Local Heat Developed in Living Animal Body by Passage of High Frequency Currents. C. A. L. Binger and R. V. Christie, New York.—p. 677.
Certain Isolated Loops in Intestinal Obstruction. H. B. Eisberg, New York.—p. 683.
Simple Respirometer for Microbial Respiration. E. B. McKinley and C. B. Coulter, New York.—p. 685.
Influence of Vegetative Nerves on Distribution of Arsenic After Arsphenamine Injections. E. F. Müller, C. N. Myers and E. Marples, New York.—p. 689.
Influence of Organic Salts on Action of Tyrosinase. K. Landsteiner and J. van der Scheer, New York.—p. 692.
Heterogenetic Haptene. K. Landsteiner and P. A. Levene, New York.—p. 693.
Mononuclear Cells of Blood in Relation to Clinical Findings in Tuberculosis. R. S. Cunningham and E. H. Tompkins, Nashville.—p. 697.
Oral Immunization of Rats Against Pneumococcus Types 2 and 3. V. Ross, Bloomfield, N. J.—p. 697.
Effect of Instillations of Ephedrine Solution on Eye. H. J. Howard and T. P. Lee, Peking.—p. 700.
Blood Changes Following Injections of Typhoid-Paratyphoid Vaccine. H. J. Howard and C. A. Mills, Peking.—p. 703.
Uricase Not Present in Soy Beans. S. M. Ling, Peking.—p. 704.
Denaturation of Hemoglobin. H. Wu and K. H. Lin, Peking.—p. 705.
*Rôle of Platelets in Blood Clotting. C. A. Mills, Peking.—p. 707.
Poisoning by Sikimitoxin. T. Q. Chou, Peking.—p. 708.
Type Specific Pneumococco-Opsonins in Serums of Animals Naturally Resistant to Pneumococcus Infection. R. H. P. Sia, Peking.—p. 709.
Determination of Guanidine Bases in Blood. C. J. Weber, Lawrence, Kan.—p. 712.
Iso-Electric Point and Median Minimum of Growth. C. H. Farr, St. Louis.—p. 715.
Method for Study of Formation of Amino-Acids in Animal Organism. W. H. Griffith, St. Louis.—p. 717.
Sympathetic and Parasympathetic Responses After Intradermal and Intracorneal Injections. H. L. White and J. Rabinovitch, St. Louis.—p. 717.
*Action of Mineral Oil per Os on Organism. M. T. Burrows and W. K. Farr, St. Louis.—p. 719.
Fatty Infiltration of Liver Induced by Lipoid Solvents. L. H. Jorstad, St. Louis.—p. 723.
*Contractures Caused by Tenotomy and by Tetanus Toxin. S. W. Ranson and H. H. Dixon, St. Louis.—p. 725.
*Injections of Caffeine and Epinephrine and Subsequently Staphylococcus Aureus Suspensions on Myocardium and Endocardium. S. Johnson and W. J. Siebert, St. Louis.—p. 726.
*Effect of Follicular Extract on Generative Organs of Hysterectomized Guinea-Pigs. L. Loeb and W. B. Kountz, St. Louis.—p. 728.
Animal Passage Hypoglycemia. J. B. Collip, Edmonton, Ala.—p. 731.

Secondary Hypoglycemia.—It is suggested by Levine that in all conditions in which a secondary hypoglycemia is apt to occur, dextrose or preferably dextrose and insulin, should be administered as a therapeutic measure. Such procedure should be followed to prevent the symptoms of postanesthetic or postpartum hypoglycemia, and in poisoning or overdoses of such drugs as morphine or strychnine.

Influence of Thyroid on Experimental Rickets.—The work done by Kunde and Williams demonstrates the necessity of the presence of thyroid hormone for the complete utilization of cod liver oil.

Experimental Thrombosis.—The apparatus used by Shionoya et al. is composed of an arterial and a venous cannula connected peripherally by a transparent, semipermeable collodion tube, the whole forming a U-shaped system. The cannulas are inserted into the carotid artery and jugular vein of a rabbit after the apparatus is filled with physiologic sodium chloride solution, and the membrane portion rests in a similar saline solution. When circulation is established, the blood flows through the system and back to the animal without contact with air. The influence of many factors on the rate and type of thrombosis may be determined by means of this device.

Effect of Iodine on Heat Production.—Two rabbits studied by Marine et al. which received eight daily doses of 0.075 cc. compound solution of iodine showed a rise in heat production, beginning about the fifth day and continuing until the solution was stopped, after which it returned to normal in a few days.

Feeding Soluble Fractions of Beef Liver in Pernicious Anemia.—The alcohol-ether soluble fractions of fresh beef liver were used by West in five consecutive cases of pernicious anemia. Improvement was noted in each case.

Fat Not Transformed into Glucose.—The conclusion is reached by Milhorat and Deuel that acetic acid is not convertible into glucose nor largely excreted as such by a phlorhizinized dog. It must be largely oxidized. The hypothesis that fat may be transformed into glucose, based on such evidence, is, therefore, not valid.

Clostridium Oedematoides in Wound Infection.—All anaerobic bacillus has been cultivated by Meleney et al. from the lesion in a fatal human operative wound infection and from catgut. It is pathogenic in small doses for eight different species of laboratory animals. It produces a lesion in these animals resembling somewhat the lesions produced by *B. oedematiens* and *Vibrion septique*. It differs from these organisms strikingly in certain of its cultural characteristics. Serologically, it has been demonstrated to be distinct from both of these. The name proposed for this new species is *Clostridium oedematoides*.

Heat Developed by High Frequency Currents.—Experiments made by Binger and Christie indicate that the efficiency of the local circulation determines whether the heat produced by the passage of high frequency currents through the living animal will remain localized or be disseminated uniformly throughout the body.

Rôle of Platelets in Blood Clotting.—Mills states that platelets do not contain thrombin or prothrombin, but do contain free cephalin and tissue fibrinogen, and are thus similar to other body tissues.

Action of Mineral Oils on Organism.—It is held by Burrows and Farr that the mineral oils, quite different from the vegetable oils, not only remove the fat soluble vitamins from the food, but produce other toxic effects as well. From studies made of the effects of these oils on the tissues and in the production of cancer, it may be assumed that their toxic effect is due to the fact that they act on the mucous membrane of the intestines to strip these tissues of the body further of their fat soluble vitamin reserve.

Action of Tetanus Toxin on Muscle.—Ranson and Dixon state that tetanus toxin also exerts a direct action on muscle, causing a shortening and increased resistance to permanent elongation when injected after section of the motor nerve.

Experimental Myocarditis.—Johnson and Siebert concluded that the myocardial lesion in the rabbit produced by the injection of epinephrine and caffeine influences the localization of abscesses caused by the intravenous injection of staphylococcus cultures, and that under certain conditions these myocardial lesions may also increase the number of abscesses.

Mechanism and Regulation of Sexual Cycle.—These investigations substantiate the interpretation of the mechanism of the sexual cycle given by Loeb and Kountz previously as to the existence of two different phases in the cycle; they also confirm their conclusions that in the regulation of the sexual cycle they do not have to deal with one single generative hormone residing in the follicles, but with the complex interaction of at least two and probably an even larger number of substances derived from corpus luteum as well as from follicles.

Southern Medical Journal, Birmingham, Ala.

20: 335-420 (May) 1927

*Occult Blood in Stools. J. Friedenwald and T. H. Morrison, Baltimore.—p. 335.
Effect of Trauma on Female Generative Apparatus. L. E. Burch, Nashville, Tenn.—p. 339.
*Treatment of Diabetic Coma. A. H. Bunce, Atlanta, Ga.—p. 341.
Casual and Unexpected Cures of Supposedly Incurable Skin Diseases. E. A. Blount, Dallas, Texas.—p. 342.
Treatment of Vaginal Hernia Associated with Prolapsus Uteri. J. M. Hundley, Jr., Baltimore.—p. 345.
*Kinesthetic Function of Precentral Convolution. C. E. Dowman, Atlanta, Ga.—p. 348.
Infant Feeding and Nutrition. M. Marriott, St. Louis.—p. 352.
Heart Load. N. S. Stern, Memphis, Tenn.—p. 355.
Interrelationships of Psychiatry and Surgery. W. S. Bainbridge, New York.—p. 357.
Vascular Factor in Appendicitis. G. S. Graham, Birmingham.—p. 365.
Relation of Hypothyroidism to Obstetrics and Gynecology. C. D. O'Keefe, St. Louis.—p. 375.
Etiology and Treatment of Spastic Colon. W. G. Morgan, Washington, D. C.—p. 380.
Advantages and Dangers of Perineal Prostatectomy. B. A. Hayes, Oklahoma City.—p. 383.
Economic Considerations Influencing Local Health Organizations. E. L. Bishop, Nashville, Tenn.—p. 389.
Experience with Anesthetics and Illustration of Method Employed. E. H. Cary, Dallas, Texas.—p. 393.
Industrial Eye Injuries. J. B. Stanford, Memphis, Tenn.—p. 398.
Historical Review of Early Dermatology. J. M. King, Nashville, Tenn.—p. 402.

Occult Blood in Stools.—The presence of occult blood in the stools is regarded by Friedenwald and Morrison as being of great value as an aid in the diagnosis of simple ulcerative lesions, as well as in malignant disease of the gastro-intestinal tract. While this condition occurs, however, in other diseases, it need not necessarily add great difficulty in the diagnosis, as the clinical manifestations in most instances will point to the correct condition. Occult blood is usually noted in peptic ulcer, especially if frequent examinations are made, and usually at the time of the exacerbation of the symptoms, disappearing when these abate. The healing of an ulcer is indicated by a diminution in, and finally an absence of, occult blood in the stools. Occult blood is not always observed in the stools in cancer of the gastro-intestinal tract in its early stages. It occurs, however, as soon as ulceration takes place, and then persists throughout the course of the disease.

Treatment of Diabetic Coma.—Bunce shows that the grave complication of diabetic coma may be handled successfully by any practicing physician with a minimum of laboratory equipment and experience. It is important to get to the patient as early as possible and to stay with him. The patient should be catheterized at hourly intervals. External heat should be applied, and the bowels cleansed with an enema immediately. The stomach should be washed and castor oil left in it. Croton oil may be necessary occasionally. Forced fluids, such as water, orange juice, hot clear broth, are indicated. Insulin is given at hourly intervals, more frequently if necessary, until the sugar begins to decrease in the urine. Then the dosage is decreased rapidly to avoid letting the patient come out of coma into insulin shock. Blood sugar determinations at frequent intervals are helpful, and should be made if possible. Other laboratory procedures are helpful, but not essential. The diet is resumed cautiously and relapse is watched for.

Kinesthetic Function of Precentral Convolution.—Four cases are reported by Dowman in which an area in front of the rolandic fissure was coagulated by injection of 95 per cent alcohol. In each case there was an immediate impairment of the kinesthetic sense, showing that the so-called kinesthetic sense is represented in front of as well as behind the rolandic fissure. The precentral gyrus, therefore, is sensory-motor and not purely motor in function.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Disease in Childhood, London

2: 71-145 (April) 1927

*Bronchiectasis in Childhood. L. Findlay and S. Graham.—p. 71.
*Pyelitis in Infancy. B. Chown.—p. 97.
*Leukemia in Infancy and Early Life. G. W. S. C. Ramsay.—p. 119.
*Indirect Determination of p_H of Blood in Children. S. Graham and N. Morris.—p. 138.

Bronchiectasis in Childhood.—Of the twenty-three patients considered by Findlay and Graham, nine died, two from septic pneumonia, one of whom had in addition early tuberculosis; one from hemoptysis; one from multiple cerebral abscesses; one from tuberculous meningitis, and four as a result of operation. One patient died during the operation for pneumectomy; one two days after the same operation from hemorrhage through the slipping of the ligature at the root of the lung, and two some time after the fixation of the lung to the thoracic wall and the incision of the cavities for drainage.

Pyelitis in Infancy.—Chown regards the term pyelitis of infancy as a misnomer. The common lesion is a multiple, focal, suppurative, interstitial nephritis, with which is associated occasionally some degree of pyelitis, and rarely cystitis. The lesion is usually bilateral, but when it is unilateral it is more often right-sided than left-sided. Rarely, the lesion found is an acute glomerulitis, or a cystitis. Pyelitis as a sole lesion seldom, if ever, occurs. The commonly associated bacterium is probably *Bacillus coli.* The renal lesions are usually secondary to an inflammatory process elsewhere.

Leukemia in Infancy.—An analysis is made by Ramsay of the clinical features of 100 cases of leukemia occurring in children under 8 years of age. It is shown that the symptomatology of all three varieties of the disease is more or less the same, and that the commonest features are enlargement of the spleen, lymphatic glands and liver, along with some degree of fever and various forms of hemorrhage. The disease runs an acute course, and the patient rarely lives more than two months after the diagnosis has been made. The blood picture shows a marked degree of anemia and a leukocytosis in all forms of the disease. The leukocytosis is highest in lymphocytic leukemia and lowest in lymphoidocytic leukemia, although in either of these varieties an actual leukopenia may be present. Nineteen cases of myelocytic leukemia are analyzed and it is shown that, in addition to a very high myelocyte count, there is also a large absolute lymphocytosis.

Determination of Blood Carbon Dioxide Tension.—An indirect method of determining the carbon dioxide tension of arterial blood in children by means of air injected into the rectum is described by Graham and Morris. The method is inapplicable in children under 2 years of age. A method of determination of the p_H of the blood by means of Hasselbalch's formula is outlined and some results are reported. The p_H of the blood calculated by this method varies in normal children over 2 years from 7.32 to 7.50.

British Journal of Surgery, Bristol

14: 557-716 (April) 1927

Gamgee's Tissue. D'Arcy Power.—p. 557.
*Surgical Treatment of "De-Gloved" Hand. G. H. Colt.—p. 560.
*Reconstruction of Internal Ligaments of Knee Joint: Eleven Cases. M. Horan.—p. 569.
Intestinal Sac at Site of Meckel's Diverticulum. F. J. Jauch.—p. 576.
Intussusception of Appendix. G. P. B. Huddy.—p. 580.
*Chemical Changes Associated with Gallstones: Relation Between Gallstones and Hypercholesterolemia. F. S. Fowweather and G. A. Collinson.—p. 583.
Intrathoracic New Growths: Seven Cases. A. T. Edwards.—p. 607.
Solitary Cysts of Kidney. A. Fullerton.—p. 629.
*Bone Changes in Renal Rickets. E. P. Brockman.—p. 634.
Case of B. Welchii Cholecystitis. E. P. Gould and L. E. H. Whitby.—p. 646.
Fractures of Malar-Zygomatic Compound: New Roentgen-Ray Position. H. D. Gillies, T. P. Kilner and D. Stone.—p. 651.
Case of Albers-Schönberg's Disease. H. R. Sear.—p. 657.
Two Cases of Carcinoma of Colon with Extension. E. R. Flint.—p. 661.
Pyloric Obstruction in Infant from Pressure of Distended Gallbladder. H. H. Greenwood.—p. 663.
Primary Carcinoma of Appendix. G. B. Woodd-Walker.—p. 665.
Hydatid Disease of Kidney. E. T. Willans and M. G. Stewart.—p. 667.
Aneurysm of Femoral Artery with Pott's Disease of Spine. E. P. Brockman.—p. 669.
Case of Lumbar Hernia. H. Edwards.—p. 672.
Anatomic and Functional Reproduction of Metacarpal by Bone-Graft. A. Fowler.—p. 675.
Radium Carcinoma of Thumb. C. P. G. Wakeley.—p. 677.
Foreign Bodies in Ileal (Meckel's) Diverticulum: Formation of Pedunculated Cyst Which Strangulated Loop of Small Intestine. H. Miller.—p. 678.

Treatment of "Degloved" Hand.—Two cases are described by Colt to illustrate how fingers that have been completely skinned may be saved by a primary plastic operation.

Reconstruction of Internal Ligaments of Knee Joint.—Reconstruction of the anterior crucial and internal lateral ligaments of the knee joint from fascia lata has been performed by Horan in eleven cases of tearing or stretching of these ligaments. The operation results in a joint capable of withstanding the stress and strain to which it is subjected in the course of ordinary, average life.

Relations Between Gallstones and Cholesterol.—Of seventy-five cases of gallstones in which the blood cholesterol was determined by Fowweather and Collinson, thirty-five (46.7 per cent) showed definitely raised values, while eight (10.7 per cent) showed high normal values. In only four were there low normal values, and no case gave values less than 0.11 per cent. Out of fifty-eight cases in which the blood calcium was determined, nineteen (32.8 per cent) showed definitely raised values, while five (8.6 per cent) showed high normal values. In only two cases were there low normal values, while a case in which jaundice was present when the specimen was taken for analysis gave a definitely low value. Eleven of the nineteen cases showing raised blood calcium occurred among the thirty-five patients with raised blood cholesterol, while the remaining eight occurred among the thirty-six patients with a normal or high normal blood cholesterol.

Bone Changes in Renal Rickets.—Comparing the changes found in renal rickets with rickets and the normal bone, Brockman says that the shafts of the bones in renal rickets are straight, and the deformities when they develop are not, as in rickets, due to an increase of the normal curve, but are the result of the separation and displacement of the epiphyses. This displacement is seen most markedly at the lower ends of the femur, tibia, radius and ulna. The red marrow is replaced by a fat marrow, more advanced in some bones than in others. There is very little bone formation. There is active bone absorption by osteoclasts both in the neighborhood of the growth disk and also of the shaft of the bone beneath the periosteum. The absorbed bone is replaced by fibrous tissue. In rickets there is a quantity of fibrous tissue laid down among the trabeculae of bone which have been formed, but in renal rickets it is very much increased in extent. Thickening of the walls of the arteries in the medulla takes place, with degeneration of the endothelial cells lining them. There is an increase in the number of capillaries in the region of the growth disk as compared both with the number seen in normal persons and in rickets.

British Medical Journal, London

1: 783-822 (April 30) 1927

*Asthma in Childhood. R. Hutchison.—p. 783.
*Infantile Paralysis. A. R. Jones.—p. 785.
*Treatment of Congenital Spastic Paraplegia by Sympathetic Ramisection. N. D. Royle.—p. 787.
Vascular Diseases and Sympathetic System. H. A. Harris.—p. 789.
*Intravenous Therapy. H. Pritchard.—p. 792.
*Treatment of Rodent Ulcer by Trichloracetic Acid. H. Leslie-Roberts.—p. 794.
Hemostatic Clamp as Aid in Dissection of Tonsils. L. G. Brown.—p. 795.
*Late Results of Chronic Gastric Ulcer Treated Medically. L. Forman.—p. 796.
*Rupture of Rectus Abdominis Muscle. P. J. Moir.—p. 796.
*Id.: Simulating Appendicitis. C. R. McCash.—p. 797.
Pulmonary Embolism Following Childbirth; Recovery. M. Hallam.—p. 797.

Asthma in Childhood.—Hutchison says that the possibility of recovery for the asthmatic child is much greater than one would suppose. In a large proportion the attacks either cease altogether or become few and slight, although in cases in

which the disease has lasted several years there may be some emphysema and some stunting of growth and development.

Prevention of Infantile Paralysis.—Jones states that the virus is present in the mucous membrane of the nasopharynx of infected persons, and therefore persons in contact with the disease should cleanse their throats by gargling three times a day with a 1:4,000 solution of potassium permanganate.

Sympathetic Ramisection for Spastic Paraplegia.—Royle reports the effect of sympathetic ramisection in twenty-six consecutive cases of spastic paraplegia. The operation was carried out in all cases on both lower limbs. The cases were of the rigid type, except one of the choreic type. As regards walking, there was a diminution of the disability in all patients except one, who was able to walk before the operation. Sixteen were unable to walk alone, and of these, fourteen learned to walk within six months. In some cases the improvement was remarkable. Another notable effect of the operation was the relief from the necessity for mechanical support; and the ability to walk increasing distances without fatigue is a constant postoperative result. All the patients exhibited changes which can be ascribed only to altered tone. The faculty of balance or of increased facility in balance is an invariable immediate postoperative effect, and accounts for the rapidity with which these patients learn to walk. Almost every patient reported increased facility in performing active movements. Another important acquisition is the power of inhibition.

Intravenous Therapy.—In Pritchard's opinion the intravenous route has much to recommend it. By whatever channel drugs are given, they must ultimately reach the circulating blood. Therefore, it would appear to be only logical to put them straight into the blood stream. But intravenous medication demands careful handling and, in using it, one may better err on the side of caution.

Rodent Ulcers; Trichloracetic Acid Treatment.—Leslie-Roberts says that the superiority of trichloracetic acid in the treatment of rodent ulcer lies in the fact that its action leads to complete coagulation of the cell contents. The compounds formed between the acid and the cell contents are nonhydrophil, and therefore do not tend to draw lymph out of the capillaries. Thus the acid converts the neoplasm into a solid block of dead tissue, which is gradually thrust out by the undergrowth of the healthy living cell of the epidermis.

Treatment of Gastric Ulcers.—The impression that the chances of the successful treatment of a gastric ulcer with a long history are poorer than in one of short duration does not receive support from Forman. Ulcers of the cardia, he asserts, give a good result with medical treatment.

Rupture of Abdominal Rectus.—Moir's patient was an acrobat. Half the transverse extent of the muscle was torn. The divided muscle was united with stout catgut applied as mattress sutures. The patient made an uninterrupted recovery.

Id.: Simulating Appendicitis.—While reaching up to a jar from a shelf, McCash's patient felt a sharp pain in the right iliac region. The abdomen presented slight resistance in the lower half of the right rectus muscle and slight deep tenderness, with its maximum 1 inch above and internal to McBurney's point. A tumor was not palpable. A diagnosis of subacute appendicitis was made, and the abdomen was opened by a right paramedial incision. The rectus sheath was blood-stained, and on opening it the middle third of the muscle was found to be ruptured about 1½ inches below the umbilicus. The appendix was normal in every way. The ends of the ruptured muscle were approximated. Apart from the extrusion of a catgut suture, the patient made an uneventful recovery, and was discharged with a firm scar in sixteen days.

Heart, London

14: 1-109 (April 20) 1927

Influence of Cutaneous Nerves on Reactions of Cutaneous Vessels. T. Lewis, K. E. Harris and R. T. Grant.—p. 1.
*Vascular Reactions of Skin to Injury: IX. T. Lewis and I. M. Harmer.—p. 19.
*Vasodilatation Arising from Antidromic Impulses, to Herpes Zoster and Trophic Effects. T. Lewis and H. M. Marvin.—p. 27.
*Temperature of Venous Blood: Use in Estimating Rate of Blood Flow to Hand. K. E. Harris and H. M. Marvin.—p. 49.
*Rate at Which Edema Forms When Veins of Human Limb are Congested. A. N. Drury and N. W. Jones.—p. 55.
*Electrical Field Surrounding Active Heart Muscle. W. H. Craib.—p. 71.

Vascular Reactions of Skin to Injury.—Observations made by Lewis and Harmer supply further and direct evidence that in urticaria factitia a substance having a histamine-like action is released in the skin and gradually passes into the general circulation, there to act generally. The amount of substance released when the trunk is extensively whealed is calculated to be equivalent to about 0.1 mg. of histamine base. One third of this quantity of histamine base, introduced subcutaneously, yields a recognizable general reaction. The concentration of the released substance in wheal fluid is calculated, in terms of histamine, to be about 1 in 1,500,000, agreeing closely with previous determinations by other methods.

Vasodilatation Arising From Antidromic Impulses.—Lewis and Marvin state that when the skin presents a reaction consisting of local reddening, whealing and a widespread flare, or when it presents local reddening associated with blistering, the vascular reactions of the skin are the result of the release of a histamine-like substance in situ; this conclusion is intended to cover all such reactions, irrespective of their remote causes. Antidromic impulses passing along sensory nerves cause vasodilatation by releasing a vasodilator substance from the tissues which the sensory nerve supplies. Nervous impulses are capable of influencing the sizes of peripheral vessels in one of two distinct ways; namely, by a direct or relatively direct action, and by an indirect action in which a released vasodilator substance is the immediate cause of vasodilatation. Herpes zoster is due to antidromic impulses passing down the sensory nerves and releasing in the skin substances of a histamine-like nature. It is suggested that antidromic impulses are concerned in controlling metabolic or secretory activities of tissues supplied by them, and that trophic lesions, so called, are due to disturbances of this control.

Temperature of Venous Blood.—Observations on the temperature of venous blood in situ by means of a thermo-electric junction are recorded by Harris and Marvin. The temperature of venous blood, when the hand is at rest, room temperature being between 20.8 and 24.4 C., assumes a level between 34.3 and 35.8 C. When a water bath between 26 and 32 C. is used, the average difference between the temperatures of the bath and the venous blood in the hand is 1.84 after fifteen minutes and 1.31 C. after thirty minutes immersion.

Rate at Which Edema Forms.—Edema has been produced by Drury and Jones in the leg of healthy subjects by raising the venous pressure in the limb. The increase in leg volume has been measured by means of a specially devised plethysmograph which does not impose pressure on the limb, which is free from air leaks, and can be adjusted quickly on the limb. The rate at which edema forms has been estimated by measuring the increase in volume from the tenth to the thirtieth minute after cuff pressure has been applied to the veins. The increase during this period is due solely to edema.

Electrical Field Surrounding Active Heart Muscle.—Evidence is given by Craib from which it would appear that when an element of cardiac muscle is excited, an initial electric disturbance occurs which, so far as points outside the element and associated with it by means of a conducting medium are concerned, may be described as producing an external electric field identical with that which might be expected were the disturbance of the nature of a specifically defined electrical doublet. Also, this initial electrical phenomenon is of very short duration, and has a definite orientation in relation to the element. Sooner or later, a second electrical disturbance appears and gives rise to an electric field equally capable of explanation on the basis of a doublet, but differing from the preceding disturbance in that its orientation is reversed and its duration in time relatively prolonged. These two electrical disturbances give rise to the initial and final phases of the electrocardiogram, respectively.

Kenya Medical Journal, Nairobi, East Africa

4: 1-36 (April) 1927

Diagnosis of Liver Abscess: Forty Cases. P. Manson-Bahr.—p. 2.
Polyvalent Vaccine in Prophylaxis of Bacillary Dysentery in East Africa. W. H. Kauntze.—p. 17.

Lancet, London

1: 1009-1060 (May 14) 1927

Failures of Prostatectomy. J. Thomson-Walker.—p. 1009.
*Ovarian Hormone. F. Dickens, E. C. Dodds and D. J. T. Brinkworth.—p. 1015.
Psychologic Treatment of Mania and Depression. E. Snowden.—p. 1016.
*Effect of Administration of Sodium Beta-Hydroxy-Butyrate on Glycosuria of Phloridzin Diabetes. N. Morris and S. Graham.—p. 1020.
*B. Fallax in Chronic Arthritis. J. Mutch and N. Mutch.—p. 1021.
*Ultraviolet Irradiation in Gangrene. P. Bousfield.—p. 1023.
*Diastatic Reaction in Obstructive Jaundice. J. D. Thomson.—p. 1023.
Case of Facial Paralysis of Aural Origin in Infant Seven Weeks Old. N. Hobhouse and C. J. Marshall.—p. 1024.

Ovarian Hormone.—A method is described by Dickens, Dodds and Brinkworth for obtaining the estrus-producing hormone in a water soluble form by extraction from placenta, the yield being more than 1,000 rat units per kilogram. The activity of the preparation can be easily reduced to below 0.5 mg. per rat unit. Further work indicates that this degree of purity may be exceeded without much difficulty.

Effect of Sodium Butyrate.—In neither of the two experiments made by Morris and Graham did the butyrate cause an appreciable rise in the D:N ratio, their results agreeing with those of Marriott. Evidence of its conversion into sugar was not afforded.

Fallax Bacillus in Arthritis.—Cultures were made by the Mutches from joints excised for orthopedic purposes. In one case a pure culture was obtained of *B. fallax*, an organism which has been isolated occasionally in the past from gangrenous wounds and cases of puerperal septicemia. The effects following the use of *B. fallax* vaccine have been impressive.

Ultraviolet Irradiation in Gangrene.—Bousfield suggests that bedsores in old people may be amenable to treatment with the ultraviolet ray. A case in point is reported.

Obstructive Jaundice.—In a case of obscure obstructive jaundice, Thomson made a series of diastatic reaction tests. The tests indicated a ball-valve action so far as the pancreatic obstruction was concerned, and made it reasonably certain that the biliary obstruction was due to a gallstone that had passed along the common duct, and was now caught in Vater's papilla. This diagnosis was confirmed by the surgeon.

Medical Journal of Australia, Sydney

1: 561-594 (April 16) 1927

Workers' Compensation Act, 1926. R. J. Millard.—p. 562.
Pertussis. R. Southby.—p. 564.
Management of Whooping Cough in Hospital. H. McLorinan.—p. 569.
Prostatectomy: Results. J. T. Tait.—p. 571.
*Obstruction of Ileum in Pregnancy. F. C. Burke-Gaffney.—p. 577.
Immunotransfusion in Bacterial Endocarditis. D. D. Browne.—p. 578.
Bilateral Glioma Retinae. C. G. Berge.—p. 578.

Obstruction of Ileum in Pregnancy.—In the case cited by Burke-Gaffney there was found crossing over the ileum near the ileocecal junction a rather thick band compressing but not obstructing the bowel; this band was tied and cut. About 30 cc. further up the ileum another thick band was found across the bowel completely constricting it. Under this band which was divided and tied, the bowel was cicatrized right round and its lumen obliterated. On each side of this obstruction the bowel seemed healthy, though very distended proximally. Burke-Gaffney made a very considerable longitudinal incision with the constriction as the center, and sutured the opening transversely (enteroplasty). The patient recovered.

Royal Soc. of Trop. Med. & Hygiene Trans., London

20: 401-486 (March 9) 1927

Hemoglobinuria. J. W. W. Stephens.—p. 401.
*Cutaneous Leishmaniasis of Dogs in Iraq. C. R. Chadwick and C. McHattie.—p. 422.
*Destroying Fly Larvae Developing in Stable Manure. G. B. Mason.—p. 433.
Detection and Treatment of Bilharziasis and Ankylostomiasis in Dongola Province, Anglo-Egyptian Sudan. D. S. Davies.—p. 436.
Immunity in East Coast Fever. G. B. Purvis.—p. 447.
Cutaneous Poison of Beetle, Paederus Fuscipes. E. N. Pavlovsky and A. K. Stein.—p. 450.
Breeding of Phlebotomus Papatasii. M. Ashner.—p. 452.
Mass Diagnosis of Ankylostome Infestation: XV. Criticisms: Scientific, Legalistic and Pontifical. C. Lane.—p. 455.
Unusual Case of Aortic Aneurysm. W. A. Young.—p. 478.

Cutaneous Leishmaniasis of Dogs.—Cutaneous leishmaniasis of dogs is said to be common in Iraq, particularly in Baghdad. A careful search for visceral infection, made by Chadwick and McHattie in ten dogs affected with the sore which were specially destroyed for the purpose, showed a complete absence of a concurrent visceral infection. Apparently there is not any morphologic difference between the human and canine parasites. Generally one attack confers immunity. The parasite has not been found in the peripheral blood of the dog. Inoculation experiments have given negative results. Treatment is useless.

Destroying Fly Larvae in Stable Manure.—The principles of the method described by Mason are as follows: The compression of moist manure by close packing results in the center of the heap becoming so hot, owing to fermentation, that the heat generated is quite sufficient to kill the fly larvae which are hatched out from the eggs previously deposited by the flies in the fresh manure. It is found, however, that quite a considerable number of larvae escape the heat in the center by migrating to the outer and cooler exposed layers of the heap. Many of the larvae which thus survive will, when mature, endeavor to reach the cool, dry earth in which to pupate. Their migrations are prevented by the open channel in which they are trapped and destroyed in cresol solution. Furthermore, their escape over the walls is prevented by a projecting ledge, which causes them to fall back on to the heap. The packed manure should not come into contact with this ledge. A certain number of these migrating larvae will remain in the cool, outer layer of the heap, and complete their development into adult flies therein. To remedy this, the outer exposed surfaces must be raked off and turned into the hot center of the heap every day during the close packing process.

Japan Medical World, Tokyo

7: 31-63 (Feb. 15) 1927

Influence of Hydrogen Ion Concentration and Several Drugs on Antidromic Action in Toad. B. I. Hazama.—p. 31.
Treatment of Snake Bite (Agkistrodon Blomhoffi Boie). H. Wada.—p. 35.
Actual Consumption of Food in Japan. S. Toda.—p. 41.

Japanese Journal of Pharmacology, Kyoto

4: 18-28 (March 20) 1927

Physical and Pharmacologic Influences on Action of Curare: III. Calcium, Barium and Magnesium. S. Hori.—p. 1.
Id.: IV. Physostigmine and Nicotine. S. Hori.—p. 18.
Action of Parasympathetic Poisons on Vessels. H. Kabo.—p. 18.
Relation Between Quantity of Urine and Modes of Administration of Ringer-Locke's Solution. S. Uyeda.—p. 19.
Pharmacologic Investigation of Embryonal Chicken Hearts in Various Stages of Development: I. M. Fujii.—p. 20.
Subcutaneous Infusion of Ringer-Locke's Solution in Cases of Chloral Hydrate Poisoning and Hemorrhage. S. Uyeda.—p. 21.
Pharmacologic Action of Diacetyllycorins. Y. Okazaki.—p. 22.
Does Repeated Application of Poisons to Surviving Rabbits' Intestine Affect Their Action? Y. Okazaki.—p. 22.
Pharmacologic Reaction of Denervated Vessels. S. Gotô.—p. 23.
Pharmacologic Investigation on Isolated Heart of Hyperthyroidectomized Rabbit. K. Kuwahata.—p. 23.
Action of *p*-Phenylendiamine on Frog's Heart. Y. Tsuda.—p. 24.
Like Action of Metals: I. Complementary Action of Calcium and Strontium. R. Ôno.—p. 25.
Pharmacologic Investigation on Embryonal Chicken Heart at Various Stages of Development: II. M. Fujii.—p. 26.
Electrical Irritability of Chloralized Heart: Action of Strophanthins on Conductive System. S. Takagi.—p. 26.
Reviving Chloralized Heart by Means of Drugs. S. Takagi.—p. 27.
Component of Folio Pruni Persicae: I. K. Inuki.—p. 28.

Okayama Medical Journal, Okayama, Japan

447: 443-592 (April) 1927

Occurrence of Cholic Acid in Saponified Fish Bile. M. Schoda.—p. 443.
Indophenoloxydase Reaction of Nervous System. K. Kumagai.—p. 446.
Connections of Globus Pallidus with Corpus Luysi and Substantia Nigra in Rabbits. S. Inui.—p. 475.
*Immunization Studies on Herpes Simplex and Zoster. I. Ehara.—p. 504.
Action of Calciums on Uterus and Effect on Action of Epinephrine, Pituitary Extracts and Histamine. Y. Takahashi.—p. 542.
Acid Fuchin Staining. S. Matsuura.—p. 568.
Liver Function Tests in So-Called Epidemic Encephalitis (Typhus B) and Its Sequelae. S. Ohmori.—p. 586.

Virus of Herpes Simplex and Zoster.—Ehara asserts that the viruses of herpes simplex and zoster are identical so far as his immunization studies showed.

Annales de l'Institut Pasteur, Paris

41: 83-200 (Feb.) 1927

Biochemical Researches on Toxins and Their Derivatives. A. Berthelot et al.—p. 83.
Mixed Infection Induced by the Trypanosome and Spirochete. R. Vinzent. —p. 131.
Beta-Oxybutyric Acid from Autolysis. M. Lemoigne.—p. 148.
*Pathogenetic and Prophylactic Rôle of Cerebrospinal Fluid in Rabies. A. Speransky.—p. 166.
Streptococcus Filtrates in Treatment of Erysipelas. K. T. Gloukhoff. —p. 189.
Variations of Cholesterol in Rabies. A. C. Marie.—p. 195.
Experimental Research on Street Virus in Cochin-China. Bablet et al. —p. 199.

Rôle of Cerebrospinal Fluid in Pathogenesis and in Prevention of Rabies.—Speransky lays stress on the fact that the prevailing phenomena in rabies are similar to those in toxic encephalitis. They appear to be induced by lesions in the subcortical portion of the brain. Histologic examination showed that the infiltration of the cerebral tissue is situated around spaces in which cerebrospinal fluid is present. The following experiments were made on rabbits and dogs: The total cerebrospinal fluid was withdrawn; immediately after this, an emulsion of fixed virus was injected beneath the dura mater. The disease developed in these animals from three to twelve hours later than in the controls. A series of dogs were injected with rabies virus and with antirabic serum, after removal of the cerebrospinal fluid. Only one dog developed rabies, the incubation period was twelve days. In five patients with severe tetanus, prompt recovery was obtained with tetanus antiserum injected into the subdural space from which the cerebrospinal fluid had been withdrawn. The following experiment in active immunization was carried out: Cerebral tissue of a rabbit dead from rabies was mixed with the cerebrospinal fluid of an ox. The filtrate was injected into the spinal canal in thirteen rabbits. One or two days later, the animals were inoculated beneath the dura mater with lethal doses of fixed virus. Two animals developed rabies at the same time as the controls; in seven the appearance of the disease was retarded; four remained healthy. It appears that the cerebrospinal fluid may be important in isolation of the rabies virus, and consequently in active immunization against the disease.

Archives des Maladies de l'App. Digestif, etc., Paris

17: 121-240 (Feb.) 1927

Study of Pyloroduodenitis. L. Bouchut and P. P. Ravault.—p. 121.
*Nontuberculous Lesions of Mesenteric Glands. C. Cornioley.—p. 151.
Treatment of Diseases Connected with Lesions of the Digestive Tract. C. Oddo et al.—p. 165.

Nontuberculous Disease of the Mesenteric Glands.—In Cornioley's three cases the patients suffered with abdominal pain, especially in the right iliac fossa, diarrhea and vomiting. At operation the mesenteric glands were found to be enlarged, but the lesions were clearly not of tuberculous origin. It was evident that ulceration present in the intestinal mucosa and caused by infection was responsible for the enlargement of the glands. Enlarged glands tend to impair the circulation in the corresponding part of the intestine; they provoke phenomena of intestinal stasis. Enlargement of the mesenteric glands is probably a frequent occurrence; it is rarely diagnosed since the complicating compression and local circulatory disturbances in the intestine are infrequent.

Bulletin de l'Académie de Médecine, Paris

97: 583-603 (May 10) 1927

*Recent Diphtheria Epidemic in Paris. P. Lereboullet.—p. 589.
The Chronaxia in Dementia Praecox. H. Claude et al.—p. 593.
*Effect of Radium Emanations in Septic Diseases. R. Fischer and H. Wohlers.—p. 596.
Bronchial Spirochetosis with Skin Eruption. T. Mironesco.—p. 598.
*Pneumothorax in Treatment of Tuberculosis in Children. P. F. Armand-Delille.—p. 600.

Factors of High Mortality in the Last Epidemic of Diphtheria in Paris.—Lereboullet's statistics are based on cases of diphtheria treated in the Hôpital des Enfants Malades during last winter. Nothwithstanding intensive serotherapy, the mortality was 13.2 per cent, while usually the mortality in the same ward is below 5 per cent. The fact is ascribed to the coincidence of secondary infections, such as measles, chickenpox, streptococcus infection and pneumococcus diseases. The latter were the most frequent; they appeared under the form of purulent pleurisy, purulent arthritis, or bronchopneumonia. An intercurrent epidemic of influenza was evidently responsible for the pneumococcus infection, and consequently for the severity of the diphtheria epidemic.

Radium Emanations in Treatment of Grave Septic Conditions.—Intravenous injection of fluid charged with radium emanation was used by Fischer and Wohlers in treatment of fourteen cases. From 8 to 20 millicuries, thus used, brought about clinical cure in a case of actinomycosis and complete recovery in a patient with a colon bacillus infection. Rapid disappearance of fever with notable improvement was noted in cases of cholecystitis and of pulmonary congestion. Slight improvement was manifest in a case of typhoid and in one of pulmonary gangrene. The injection was usually well tolerated.

Results of Artificial Pneumothorax in Treatment of Pulmonary Cavities in Children.—Armand-Delille's experience includes 300 cases of pneumothorax performed in children with pulmonary tuberculosis. Among them were five infants. The treatment resulted in subsidence of fever and of cough, in disappearance of tubercle bacilli from the sputum and in considerable gain in weight. The insufflations were discontinued after three years. In a large number of cases, the recovery was complete. The pneumothorax never caused any deformities in the child's thorax. The results of simultaneous bilateral pneumothorax are highly encouraging. In a girl, aged 10, with cavities in both apexes, bilateral pneumothorax was followed by gain of 8 Kg. in weight; the general condition is very good. In another case, in a girl aged 3, two cavities became cicatrized within a year; she gained 4 Kg.

Bulletins de la Société Médicale des Hôpitaux, Paris

51: 567-613 (May 12) 1927. Partial Index

Tetany with Alcoholic Polyneuritis. P. Carnot et al.—p. 568.
*Disease of the Inguinal Glands with Mononucleosis. P. Chevallier. —p. 573.
Pharyngocervical Form of Adenolymphoiditis. P. Chevallier and M. Parent.—p. 581.
Carbon Dioxide of the Alveoli in Pulmonary Tuberculosis. L. Bernard et al.—p. 601.
Anatomic Lesions in Buerger's Disease. A. C. Guillaume.—p. 611.

Primary Disease of the Inguinal Glands with Severe Mononucleosis.—In Chevallier's case, in a man aged 25, after an incubation period lasting about two weeks and characterized by general weakness, the disease began with enlargement of glands in the left groin. The number of mononuclears was increased in the blood as greatly as in a pseudoleukemic condition. Then, within three months, the glands gradually decreased in size. The return of the blood picture to normal was very slow. Four months after the onset of the disease, enlarged glands appeared in both axillas. The second recurrence, again under the form of enlargement of the inguinal glands, occurred three months later. Chevallier considers this case as an inguinal form of acute adenolymphoiditis, accompanied by high grade mononucleosis and slight leukocytosis. At the end of ten months, the patient had recovered almost completely. The author is aware of one similar case, cited by Ravaut, Boulin and Rabeau.

51: 615-674 (May 19) 1927. Partial Index

Iodism from Intrabronchial Injection of Lipiodol. E. Libert and M. Bariéty.—p. 615.
*Rôle of Heredity in Exophthalmic Goiter. J. Troisier.—p. 616.
Autovaccine in Treatment of Cutaneous Sporotrichosis. A. Sézary et al. —p. 619.
Artificial Pneumothorax in Laryngeal Tuberculosis. P. F. Armand-Delille and H. Caboche.—p. 631.
Amebic Cholecystitis and Amebic Abscess in the Spigelian Lobe. Trabaud and Michel.—p. 644.
Tetany from Spontaneous Hyperpnea. P. Pagniez et al.—p. 663.
*Aldrich and MacClure Test in Mental Diseases. R. Targowla et al. —p. 665.
New Case of Postvaccinal Encephalitis. J. Comby.—p. 671.

Rôles of Heredity and of Iodine in Occurrence of Exophthalmic Goiter.—In Troisier's case, a young man with rheumatic pain in the dorsal region was treated with iodine and salicylate. Six months later, he developed signs of exophthalmic goiter. Investigation revealed that the patient's mother had had exophthalmic goiter twenty years before. Troisier believes that the rôle of the iodine in the exophthalmic goiter

was a secondary one, while that of endocrine heredity was primary.

Edema Resorption Test in Patients with a Mental Disease.—A dose of 2 cc. of a sodium chloride solution was injected intradermally by Targowla, Lamache and Daussy in patients with various mental diseases. Resorption of the induced edema was accelerated in acute alcoholism, postpuerperal psychosis, acute delirium, mania, general paralysis with mental confusion and in the febrile phase of malaria treatment. The same was observed in cases of mental disorder coinciding, for instance, with cardiac insufficiency or with pulmonary tuberculosis. In conditions of mental depression, the resorption time was notably prolonged. It was normal in chronic delirium, anxiety and slight mental confusion. In the course of improvement and recovery it became normal where it had not been normal previously. The results of the edema test paralleled those of the induced diuresis test and of the urine curve. The facts testify to the diagnostic and prognostic value of the resorption test in mental diseases.

Comptes Rendus de la Société de Biologie, Paris

96: 442-500 (Feb. 25) 1927. Partial Index

*Increase of Biliary Secretion from Methylene Blue. E. Czarnecki.—p. 442.
*Antigenic Reactions in Aspergillosis. Macaigne and Nicaud.—p. 446.
Estimation of Urea in the Blood. H. Chabanier et al.—p. 449.
*Bacteriophagy and Condition of Hyperaerobiosis. F. d'Herelle.—p. 451.
*Ultrafiltration of the Bacteriophagic Corpuscles. G. Eliava and E. Suarez.—p. 460.
*Size of the Bacteriophagic Corpuscle. G. Eliava and E. Suarez.—p. 462.
Treatment of Piroplasmosis in Dogs. A. Machado.—p. 477.
Prevention of Meningococcus Shock in Horses. A. de Assis.—p. 482.
Localization of Bartonella Muris in Organs. G. de Faria and O. Cruz Filho.—p. 489.

Increase of Biliary Secretion from Methylene Blue.—Czarnecki injected intravenously a solution of methylene blue in dogs with a fistula of the common bile duct. The injection was followed by increased secretion of bile. The amount of the bile became double the normal in about twenty minutes. The hypersecretion persisted for an hour.

Antigenic Reactions in Aspergillosis.—Macaigne and Nicaud prepared an antigen with cultures of aspergillus isolated from the sputum of patients. The antigen suspension was injected intradermally in a healthy person, in a patient with acute tuberculosis, in another with chronic tuberculosis and in one with aspergillosis. The reaction was negative in the first two; it was slightly positive in the third; strongly positive in the fourth. On examination of the sputum of the third patient, a few aspergilli and a large number of tubercle bacilli were found. In the fourth patient, besides the local reaction there was also a reaction on the part of the aspergillar focus in the lung. The focal reaction resembled that from tuberculin in tuberculosis.

Afflux of Air Favors Phenomenon of Bacteriophagy.—D'Herelle reports the results of his recent researches. A current of air had been established in Petri dishes containing dysentery bacilli, staphylococci, plague bacilli and cholera vibrions, and the corresponding bacteriophages. The phenomenon of bacteriophagy was hastened. The virulence of the bacteriophages, acquired on repeated passages, was increased still further under the effect of the hyperaerobiosis. The method may be advantageously used when a large quantity of a bacteriophagic solution is needed.

Ultrafiltration of Bacteriophagic Corpuscles.—Eliava and Suarez's experiments on the antidysenteric bacteriophage showed that the number of lytic particles of the bacteriophage decreases in the course of ultrafiltration. The remaining particles maintain their activity and virulence. Eliava and Suarez assert that contrary to the current opinion, the size of the bacteriophagic corpuscle does not exceed 0.005 μ.

Gynécologie et Obstétrique, Paris

15: 81-160 (Feb.) 1927. Partial Index

*Azotemia and Renal Functioning in the Puerperium. L. Cleisz and Laudat.—p. 81.
*Influence of Pregnancy on Appendicitis. Portes and Seguy.—p. 114.
Artificial Fecundation in the Human Species. A. A. Schorohowa.—p. 132.

Azotemia and Renal Functioning in Normal and Pathologic Pregnancy and in the Puerperium.—In forty-two healthy women examined during pregnancy, Cleisz and Laudat found that the Ambard constant was slightly increased (0.083). The phthalein test gave a slightly reduced elimination of the dye (48 per cent). There was also reduction in the amount of urea in the blood (0.24 Gm.). Similar researches were made in thirty-five pregnant women with various diseases. In women with chronic nephritis, pregnancy favored the appearance of uremic phenomena. Renal syndromes originating in pregnancy presented a transient acute hyperazotemia reaching its highest point after delivery. An increase in the blood urea was manifest in eclampsia. In grave cases associated with severe insufficiency of the liver the amount of the urea remained almost normal. In pregnant women in whom renal insufficiency is suspected, examination of the urine is less important than estimation of the urea in the blood.

Influence of Pregnancy and Puerperium on the Course of Appendicitis.—Portes and Seguy emphasize the fact that pregnancy favors the recurrence of appendicitis. The course of the disease is the same during as not during pregnancy. On the contrary, delivery accelerates the appearance of diffuse peritonitis. The conclusion is that young women subject to attacks of appendicitis should be operated on before marriage. Appendicitis developing during pregnancy should be operated on without undue delay. The percentage of interrupted pregnancies is the same with an operation as with expectant treatment (from 10 to 15 per cent). Onset of labor is not a valid reason for deferring appendectomy.

Presse Médicale, Paris

35: 625-640 (May 18) 1927

*Insulin in Treatment of Nondiabetic Arteritis Obliterans. H. Vaquez and J. Yacoel.—p. 625.
Rôle of Congenital Syphilis in Meningeal Hemorrhages. H. Schaeffer.—p. 628.

Insulin in Treatment of Nondiabetic Arteritis Obliterans.—Vaquez and Yacoel describe four of forty cases of arteritis obliterans in which insulin was successfully used. The treatment resulted in attenuation, sometimes even disappearance of the pain, and in one instance in increase of the arterial permeability. The favorable effect of the insulin is ascribed to the fact that the patients presented a juvenile form of the disease. This form appears to be due to trophic lesions in the arterial coats, caused by endocrine disturbances. A daily dose of 10, 15 or 20 units of insulin was injected subcutaneously on twenty successive days. The series was repeated at ten day intervals during several months or even for a year. Injection of 10 units of insulin twice a day, immediately before meals, is suggested. The latter should be rich in carbohydrates.

Schweizerische medizinische Wochenschrift, Basel

57: 385-408 (April 23) 1927

Pressure of the Ribs on the Brachial Plexus. E. Bramwell.—p. 385.
Physiology of Calcium Treatment. E. Rothlin.—p. 388.
"Juxta-Articular Nodes." L. Steiner.—p. 395.
Reply. E. Jeanselme.—p. 396.

57: 409-432 (April 30) 1927

Calcium Treatment. K. Kottmann.—p. 409.
*Ergotamine in Exophthalmic Goiter. M. Halder.—p. 411.
Psychiatric Conception of "Organic Spine." H. Steck.—p. 419.
Injury to the Pelvis and Homolateral Renal Dystrophia. J. Zinsstag.—p. 422.
Abraham a Santa Clara on Physicians and Pharmacists. F. W. Pollin.—p. 423.

Ergotamine in Exophthalmic Goiter.—Halder did not observe any influence from ergotamine tartrate on the basal metabolism in three healthy subjects. The metabolism was lowered in most of her hyperthyroid patients, but this may have been due to spontaneous improvement.

57: 433-456 (May 7) 1927

The Heart and the Psyche. W. H. von Wyss.—p. 433.
Psychiatry and Biology. H. Steck.—p. 436.
Medicolegal Cases. Steiner.—p. 442.
Hyrtl as Critic. Kalt.—p. 442.

57: 457-480 (May 14) 1927

Breast-Feeding in Bern. W. Tobler.—p. 457.
*Surgical Treatment of Pulmonary Tuberculosis. Staub-Oetiker.—p. 460.
*A New Local Anesthetic. H. Staudinger.—p. 465.
Malignant Goiter. M. Levinson.—p. 466.

Pernicious Bothriocephalus Anemia. W. Mikulowski.—p. 469.
Transient Strabismus and Meningism After Vaccination. C. Saloz and E. Frommel.—p. 471.

Surgical Treatment of Pulmonary Tuberculosis. — Staub-Oetiker speaks in favor of thoracoplasty.

A New Local Anesthetic.—Staudinger synthesized a group of substances resembling tropin, but containing only one ring ("open chain tropin"). A benzoic ester of a phenylethyl-tropin has about twice the anesthetizing power of cocaine, but only two thirds of its toxicity.

Pediatria, Naples

35: 513-576 (May 15) 1927

Constitution in Children. S. Maggiore.—p. 513.
*Acute Osteomyelitis of the Spine. A. Bocchini.—p. 554.
Hematology of Premature Infants. A. Mazzeo.—p. 564.

Acute Osteomyelitis of the Spine. — Bocchini's patient, a girl, aged 8 years, fell from a height of about 1 meter, striking the coccygeal region. The disturbances were slight at first, but two months after the accident chills, fever, rigidity of the spine and excruciating pains set in suddenly. She died from septicemia on the fourth day. The osteomyelitis involved the bodies of the second and third lumbar vertebrae. The roentgen-ray examination did not reveal any changes.

Policlinico, Rome

34: 667-702 (May 9) 1927

Leishmaniasis in Sienna. P. Barbacci.—p. 667.
*Sensitiveness of the Peritoneum and Inflamed Appendix. M. De Vincentis.—p. 671.
*Eczema in Tomato Peelers. G. Foà.—p. 675.

34: 217-272 (May 1) 1927. Medical Section

Hemolytic Splenomegaly with Grave Anemia. E. Greppi.—p. 217. C'td.
Diagnosis of Chronic Meningitis. E. Rizzatti.—p. 239.
Sacral Meningocele. L. Sabatini.—p. 254.
Meningococcus Septicemia. G. Stirpe.—p. 265.

Sensitiveness of the Peritoneum and Inflamed Appendix.—De Vincentis, while making appendectomies, tested the sensitiveness of various structures. He found that traction is the only adequate stimulus for the sensation of pain transmitted by the sympathetic fibers of the parietal peritoneum and mesentery and localized in the epigastrium. Ligation of the omentum was also painful.

Eczema in Tomato Peelers.—Foà observed eczema of the hands in children and young women employed in factories canning tomatoes. He attributes the eczema to the citric acid and succeeded in preventing it by advising the workers to dip their hands from time to time in a vat containing a 1 per cent solution of sodium hydroxide and then in water.

Riforma Medica, Naples

43: 361-384 (April 18) 1927

Hypersensitiveness. C. Frugoni.—p. 361.
*Permeability of Pleura and Peritoneum for Antibodies. G. Pansini.—p. 366.
Pyelonephritis from Eustrongylus Gigas. U. Genazzani.—p. 367.
Use of Isotonic Sea-Water. P. Piccinini.—p. 370.
*Bismuth Treatment of Psoriasis. F. Catapano.—p. 380.

Permeability of Pleura and Peritoneum for Antibodies.—Pansini found syphilitic reagins in pleural and peritoneal effusions. Agglutinins for typhoid appeared in such fluids only when the vaccine was injected into the respective cavity. He concludes that syphilitic reagins also are probably produced in the effusions locally — and are not transmitted from the blood.

Bismuth Treatment of Psoriasis.—Catapano reports good results in treatment of psoriasis with injections of a bismuth preparation.

Revista Médica de Barcelona

7: 225-367 (March) 1927

*Spinal Anesthesia and Intestinal Motility. F. Doménech Alsina.—p. 227. C'cn.
*Synthalin. R. Carrasco Formiguera.—p. 246.
Radium Treatment of Prostatic Adenoma. V. Compañ.—p. 269.
*Calmette's Tuberculosis Vaccination. L. Sayé et al.—p. 274.

Spinal Anesthesia and Intestinal Motility.—Doménech investigated experimentally and clinically the action of spinal anesthesia on intestinal motility. His eighteen cases included normal subjects and patients with dynamic volvulus and mechanical occlusion. Spinal anesthesia elicits almost immediately a marked and durable increase in intestinal peristalsis. Atropine and chloroform inhalation anesthesia inhibit peristalsis. The increased motility is caused by the temporary chemical "section" of the preganglionic fibers of the splanchnic nerve supply; thence the inhibitory influence of atropine. The results obtained by removing the splanchnic nerves in dogs paralleled the effect of spinal anesthesia. The effect of spinal anesthesia is more lasting in cases, such as peritonitis, in which the intestine is paralyzed by the increased tonus of the sympathetic system. The evacuant action is furthered by the paralysis of the anal sphincter induced by this form of anesthesia. The peristaltic effect of spinal anesthesia has clinical uses in dynamic ileus and, especially, in peritonitis and mechanical ileus.

Synthalin in Diabetes.—Carrasco was perhaps the first physician outside of Germany who had the opportunity to try synthalin. He confirms previous reports to the effect that the chief advantage of the new drug lies in its ability to act when administered by mouth. On the other hand, its toxicity may cause disturbances and its slow action precludes its use in emergencies. Cases refractory to insulin will probably be even more refractory to synthalin. At best, it is but a partial substitute for insulin in moderate and severe cases. In mild diabetes it can prove, however, very useful.

Calmette's Antituberculous Vaccination.—Since the latter part of 1924, Sayé and his associates have been carrying on experiments and clinical tests with Calmette's B. C. G. vaccine. Subcutaneous injections in the ear of the rabbit may induce a seropurulent nodule. This may last several months. B. C. G. may remain active at the site of inoculation for as long as thirteen months. Large amounts persist longer than smaller amounts. Immunity may be induced by successive injections. Small doses of virulent bacilli exert the same action as reinjections of B. C. G. vaccine. Among eighty-five children under observation for from six to eighteen months and exposed to a few bacilli from birth or to a massive contagion at the age of three to four weeks, there was not a single death certainly attributable to tuberculosis and only one that was probably caused by it. If this case is admitted, the death rate is only 1.1 per hundred.

Archiv für exp. Pathologie und Pharmak., Leipzig

120: 129-258 (Feb.) 1927

Acquired Resistance to Alcohol. L. Lendle.—p. 129.
*Insulin Plus Saponin by Mouth. F. Lasch and S. Brügel.—p. 144.
Action of Nicotine on Isolated Suprarenals. A. I. Kusnetzow.—p. 156.
Antagonism Between Chloral Hydrate and Picrotoxin. H. Wieland and P. Pulewka.—p. 174.
Urethane and Barbital. P. Pulewka.—p. 186.
Pharmacologic Action of Ephedrine. H. Kreitmair.—p. 189.
*Problem of Sleep. V. Demole.—p. 229.

Insulin Plus Saponin by Mouth.—Lasch and Brügel dissolved 0.5 Gm. of saponinum purum in 20 cc. of physiologic solution of sodium chloride and added 20 units of insulin. The mixture lowered the blood sugar in both healthy and diabetic subjects, when taken one hour before a meal and from six to eight hours after the preceding meal.

Problem of Sleep.—Demole produced sleep in cats and rabbits by injecting into the region around the tuber cinereum about 0.05 cc. of Ringer's solution containing a few tenths of a milligram of calcium chloride. Injection of potassium chloride produced the opposite effect, especially a motor irritation.

Archiv für die gesamte Physiologie, Berlin

215: 675-806 (March 2) 1927

Action of Nonelectrolytes on the Surviving Nerve. G. Ettisch and J. Jochims.—p. 675.
Action of Poisons on the Blood Vessels of the Isolated Ear. B. S. Ssentjurin.—p. 683.
Mechanism of Reflex Vomiting. E. Babsky.—p. 692.
Cerebral Inhibitory Processes. A. Samojloff and M. Kisseleff.—p. 699.
Recuperation and Gas Metabolism. E. Simonson.—p. 716.
Training and Gas Metabolism. E. Simonson and O. Riesser.—p. 743.
Respiration, Training and Gas Metabolism. E. Simonson.—p. 752.
Brightness with Binocular and Monocular Vision. F. Lippay.—p. 768.
*The Nervous System and Glycogen. E. Wertheimer.—pp. 779 and 796.
Correction. Árvay.—p. 803.

The Nervous System and Glycogen.—Wertheimer cut the sciatic nerve in dogs. Starvation and phlorhizin did not deprive the paralyzed muscles of glycogen, and the fat in the popliteal region remained. Severing of the tendon gave a similar result. On the other hand, a denervated muscle did not store glycogen when the starvation period was succeeded by feeding, but the muscles with severed tendons stored it. The storage of glycogen in the liver does not depend on the innervation.

Archiv für Verdauungs-Krankheiten, Berlin

40: 159-312 (April) 1927

*Sex Differences in Gastrointestinal Diseases. H. Günther.—p. 159.
*Action of Biliary Acids on Lime Soaps of the Stool. E. Adler.—p. 174.
*Action of Alkalis on Formation of Soaps in Feces in Jaundice. W. Heupke.—p. 184.
Lamblia Intestinalis. K. Wezler.—p. 197. C'cn.
Spontaneous Cure of Diabetes. H. Benedict.—p. 217.
Reexamination of Surgically Treated Patients. K. Glaessner and D. Ettinger.—p. 233.
Unfulfilled Hopes from Insulin. G. Arany.—p. 241.
Acute Atrophy of the Liver and Pluriglandular Disturbances. C. Eickhoff.—p. 256.
Diagnostic Value of Cholecystography. S. Mintz.—p. 265.
Mistakes in Cholecystography. T. Bársony and E. Koppenstein.—p. 281.
Vegetable Proteins in Human Feces. A. Tilger.—p. 292.

Sex Differences in Diseases of Digestive System.—Günther finds a greater frequency of ulcer of the stomach and its complications (hematemesis, perforation, subphrenic abscess) in women but a comparatively greater mortality in men. In ulcer of the duodenum the relation is reversed.

Action of Biliary Acids on Lime Soaps of the Stool.—Adler finds that bile or biliary acids increase the solubility of lime soaps, especially in the presence of sodium bicarbonate.

Action of Alkalis on Formation of Soaps in Feces in Jaundice.—From 28 to 51 per cent of the fat administered was found by Heupke in the feces of patients with jaundice. The loss of fat was increased on administration of lime. Sodium bicarbonate did not improve the absorption of fat, but increased the amount of soluble soaps in the feces.

Beiträge zur Klinik der Tuberkulose, Berlin

66: 1-263 (April 21) 1927

*Survey of the Thoracic Vegetative System. W. Braeucker.—p. 1.
*History of Phthisis. W. Pagel.—p. 66.
Peculiar Fever in Tuberculosis with Cavitation. O. Glogauer.—p. 99.
Specificity of Tuberculin Reaction. H. Selter and W. Blumenberg.—p. 105.
Action of "Sanocrysin." J. Gravesen.—p. 117.
"Sanocrysin" and Möllgaard's Serum in Guinea-Pigs. K. Weise and E. Jakobssohn.—p. 144.
Blood Colloids in Tuberculosis. S. Somogyi.—p. 163.
Significance of Sedimentation Test. F. Langebeckmann.—p. 172.
Blood Clotting in Hemoptysis. T. Sternberg.—p. 178.
*Viscosity of the Blood in Tuberculosis. G. Schnierelmann.—p. 183.
Aggravation of Tuberculosis by Injury. G. Pietsch.—p. 190.
Constitutional Disturbances from Tuberculosis. S. Budai.—p. 195.
Treatment of Intestinal Tuberculosis. E. Seuffer.—p. 213.
Technic of Thoracocauterization. Kremer.—p. 219.
Mediastinal Pleurisy in Children. W. Lüthold.—p. 222.
Physiology and Pathology of the Diaphragm. L. Maas.—p. 236.
Typhobacillosis. K. Holzer.—p. 245.
Loss of Arm and Pulmonary Tuberculosis. S. Spitz.—p. 258.
Diaphragmatic Hernia and Relaxation. K. Schlapper.—p. 260.

Survey of Thoracic Vegetative System.—Braeucker publishes a detailed anatomic and physiologic study and two pictures of the vegetative nervous system of the thorax and discusses its clinical and surgical significance. He concludes that in man several nerves contain depressor fibers. He finds that Jonnesco and Jonescu were mistaken in assuming that the accelerans nerves are not vitally important. Their patients, whose heart functioned well after sympathectomy, in reality still had accelerans nerves originating from the upper thoracal segments. The surgical methods of treatment of angina pectoris do not remove all the sensory fibers and destroy some of the motor fibers. Paravertebral injections are at least harmless and deserve further trial. Resection of the posterior bronchial branches interrupts the connection between the central nervous system and the bronchioles. If asthma were caused by a reflex through the central nervous system, such a resection would cure it. If a humoral factor intervenes, the operation would not help, because it does not affect the postganglionic nervous apparatus nor the bronchial muscles.

History of Phthisis.—Pagel follows the history of the conception of ulcerative tuberculosis of the lung from Hippocrates to the present time.

Viscosity of Blood in Tuberculosis.—Schnierelmann found that viscosity of the blood in patients with pulmonary tuberculosis shows changes parallel with the tuberculous toxicosis, the sedimentation speed and the erythrocyte count.

Biochemische Zeitschrift, Berlin

181: 1-250 (Feb. 8) 1927

*Urea Formation in Fungi. N. N. Iwanoff and A. Toschewikowa.—p. 1.
*Urea in Bacteria. N. N. Iwanoff and M. I. Smirnowa.—p. 8.
Vital Staining of Erythrocytes. P. J. Jurišić.—p. 17.
Determination of Plasmal in Serum. R. Feulgen and K. Imhäuser.—p. 30.
*Specificity of Lipases. P. Rona and R. Ammon.—p. 49.
*Ammonia Formation in Physiologically Stagnating Blood. A. Klisiecki et al.—p. 80.
*Cyanates and Ammonia Formation in the Blood. W. Mozolowski and M. Taubenhaus.—p. 85.
Sterilization of Green Fodder by Fluids. C. Brahm.—p. 96.
Metabolism of Glucuronic and Galacturonic Acids. R. Hürthle.—p. 103.
*Protection of Insulin Against Enzymes by Saponin. F. Lasch and S. Brügel.—p. 109.
Chemical Properties of Different Varieties of Wheat. L. Berczeller and H. Wastl.—p. 117.
Physical Properties of Different Varieties of Wheat. L. Berczeller and H. Wastl.—p. 133.
Bioradio-Activity of Plants. E. Burkser et al.—p. 145.
Acidity and the Action of Quinine and Urea on Pancreatic Lipase. J. A. Smorodinzew and V. A. Danilow.—p. 149.
Fermentation of Dextrose and Pyruvic Acid. E. Hägglund and L. Ahlbom.—p. 158.
*Toxicity of Local Anesthetics in Intra-Arterial Application. T. Kuroda.—p. 172.
*Hypoglycemia During Milking. O. Carlens and A. Krestownikoff.—p. 176.
Action of Potato Juice on Biologic Reduction. A. Pietsch.—p. 183.
"Stimulating Action on Single Cells." H. Schulz.—p. 192.
*Enhancing Enzymatic Action by Known Substances. M. Jacoby.—p. 194.
Growth and Amount of Nutritive Factors in Fungi. R. Meyer.—p. 207.
Mechanism of Blood Sedimentation. L. Berczeller and H. Wastl.—p. 210.
Life Expectation on a One-Sided Organic Diet. L. Berczeller and H. Wastl.—p. 216.
*Behavior of Alanine and Pyruvic Acid in Surviving Diabetic Liver. V. Laufberger.—p. 220.
Lysis of Tissue Cells. V. Laufberger.—p. 225.
Conditions of Lysis of Tissue Cells. F. Hora.—p. 230.
Correction. E. Rupp and H. Schlee.—p. 250.

Urea Formation in Fungi.—The formation of urea both from ammonium carbonate and from arginine was observed by Iwanoff and Toschewikowa in mushrooms. The latter type of formation of urea occurs even in the expressed juice, the former only in the cap of the living mushroom.

Urea in Bacteria.—Iwanoff and Smirnowa found that *Bacterium megatherium, Bacterium tumescens, Proteus sophii, Bacillus mesentericus, Bacillus subtilis* and *Bacillus mycoides* form urea in amounts between 12.8 and 15.5 mg. per ten cubic centimeters of a gelatin-peptone medium. Since the formation or urea does not occur in a mixture of amino-acids, which does not contain arginine, they conclude that bacteria can form urea only from the latter substance, not by synthesis, as do mushrooms. *Bacillus fluorescens* and *Bacillus coli* form urea only if free arginine is present. *Proteus vulgaris* does not produce it. Only cultures made without addition of dextrose or mannose develop urea. If these sugars are added, urease forms and splits the urea as soon as formed.

Specificity of Lipases.—Rona and Ammon publish an electrometric method for study of the fermentative action of lipases. They used it together with the method by gas analysis in their investigations on the stereochemical specificity of lipases and on the action of different poisons on them.

Ammonia Formation in Physiologically Stagnating Blood.—After stimulation of the splanchnic nerve, Klisiecki, Mozolowski and Taubenhaus found more ammonia in the blood from the splenic vein than in that from the jugular vein.

Ammonia Formation in Blood and Cyanates.—Mozolowski and Taubenhaus found that the formation of ammonia in the blood is not due to splitting of cyanates. They failed to find the slightest indication of any presence of cyanates in human, dog's or rabbit's blood.

Protection of Insulin Against Enzymes by Saponin.—Addition of 10 mg. of saponin was found by Lasch and Brügel to protect insulin against the injurious action of pepsin and trypsin in vitro as well as in vivo.

Toxicity of Local Anesthetics in Intra-Arterial Application.—Kuroda injected various substances of the cocaine group into the artery and found them less poisonous than when injected into the vein. It seems that they lose some of their toxicity in the capillaries.

Hypoglycemia During Milking.—Carlens and Krestownikoff determined the blood sugar in milch cows. Hypoglycemia occurred regularly during milking. The lowest blood sugar concentration observed was 0.04 mg. per hundred cubic centimeters. The phenomenon was more pronounced when the amount of milk was large and when the cows were fed beets. A goat did not present any hypoglycemia. These investigations are a continuation of Widmark and Carlen's observations on the rôle of hypoglycemia in the pathogenesis of labor paralysis in cows.

Enhancing Enzymatic Action by Known Substances.—Jacoby established the fact of a considerable increase in activity of urease from addition of potassium cyanide or histidine. Histamine and hemoglobin also enhanced the action of urease more than amino-acids do generally.

Behavior of Alanin and Pyruvic Acid in the Surviving Diabetic Liver.—Laufberger added d-l-alanine or pyruvic acid to the fluid with which he perfused a surviving liver from a pancreatectomized dog. These substances did not change into lactic acid, but showed an antiketogenic action. The added alanine was absorbed by the parenchyma of the liver within a few minutes.

181: 251-490 (Feb. 17) 1927

Reaction of Water and Growth of Bacteria. V. Enevoldsen.—p. 251.
An Enzyme Dissolving Collagen. W. S. Ssadikow.—p. 267.
*Plasmalogen in Body Fluids. W. Stepp et al.—p. 284.
Lithium Citrate in Prevention of Blood Clotting. G. De Toni.—p. 289.
Action of Carboxylase. E. Hägglund and T. Rosenqvist.—p. 296.
Biology of the Soil of Wooded Regions. R. Bokor.—p. 302.
*Biochemistry of Cancer. F. Silberstein et al.—pp. 305 and 316.
Substitutes for Sugar in Hypoglycemia. F. Silberstein et al.—p. 327.
Influence of Ergotamine, Histamine and Organ Extracts on Insulin. F. Silberstein and S. Kessler.—p. 333.
Iso-Agglutination and Blood Sedimentation. W. Schloss.—p. 345.
Constitution and Action of Alkyl-Resorcin-Carboxylic Acids. L. Bleyer.—p. 350.
Determination of Diacetic Acid. L. Lorber.—p. 366.
Relation of Acetone and Diacetic Acid in the Urine. L. Lorber.—p. 375.
The Enol and Keto Form of Diacetic Acid. L. Loder.—p. 383.
Colorimetric Micro-Determination of Iron. L. Lorber.—p. 391.
*Metabolism of Leukocytes. W. Fleischmann and F. Kubowitz.—p. 395.
Nucleinic Acid Content of Organs. N. Alders.—p. 400.
*Decomposition of Beta-Oxybutyric Acid in the Liver. I. Snapper and A. Grünbaum.—p. 410.
*Decomposition of Diacetic Acid in the Perfused Liver. I. Snapper and A. Grünbaum.—p. 418.
Oxidation Mechanism of Plants. A. von Szent-Györgyi.—p. 425.
Function of Suprarenal Cortex and Substance Cxii. A. von Szent-Györgyi.—p. 433.
*Specificity of Proteolytic Serum Enzyme in Rabbits. M. F. von Falkenhausen and H. J. Fuchs.—p. 438.
Bing and Heckscher's Determination of the Neutral Fat-Cholesterol Fraction in the Blood. H. Heckscher.—p. 444.

Plasmalogen in Body Fluids.—Stepp, Feulgen and Voit examined various body fluids for the presence of plasmalogen. This is, according to Feulgen and Voit, a substance which changes by addition of mercuric chloride or acids into another substance, which they called plasmal. The latter contains a free aldehyde group and therefore reacts in high dilutions with fuchsin-thiosulphuric acid. The substance is present in serum and milk (to a greater degree in colostrum) and especially in pus. Amniotic fluid gave the reaction, while the urine, cerebrospinal fluid and aqueous humor were always negative.

Biochemistry of Cancer.—Silberstein, Freud and Révész investigated the gas and carbohydrate metabolism of tarred mice and dogs in the precancerous stage. The respiratory metabolism increased and the changes in carbohydrate regulation resembled somewhat those found in diabetes, in protracted lack of carbohydrates or in inanition, although the animals did not show any loss in weight at that time. The insulin resistance was lowered at first, then became normal and later—as the tumor developed—it increased. Acid alcoholic extracts from tumors depressed the blood sugar slightly. Aqueous extracts from tumors induced a transitory hyperglycemia, which was sometimes protracted. Addition of these extracts or cells to insulin prevents the hypoglycemia, but, in spite of this, frequently produces the other signs of the so-called hypoglycemic syndrome. The differences between cancer cells and normal tissue cells were merely quantitative.

Metabolism of Leukocytes.—Fleischmann and Kubowitz found a considerable anaerobic fermentation of leukocytes from goose blood and from peritoneal exudates of rabbits. The respiration of oxygen does not suppress the fermentation.

Decomposition of Beta-Oxybutyric and Diacetic Acids in the Liver.—Snapper and Grünbaum confirm the fact that a part of beta-oxybutyric acid (from 16 to 32 per cent) changes into diacetic acid on being perfused through a surviving liver. They also confirm the observation of other authors on the disappearance of a large proportion of the remaining oxybutyric acid, but this is due only to its absorption by the liver. They were able to extract almost all of it from that organ. The liver also seems easily to reduce diacetic to beta-oxybutyric acid.

Specificity of Proteolytic Serum Enzyme in Rabbits.—Falkenhausen and Fuchs found that the rabbit's serum decomposes fibrin obtained from other races of rabbits.

182: 291-490 (March 19) 1927. Partial Index

*Administration of Iodine to Lactating Rats. E. Maurer and S. Diez.—p. 291.
Significance of Iron, Zinc and Copper for Micro-Organisms. H. Bortels.—p. 301.
Cations of Organs After Irradiation and in High Altitudes. L. Pincussen.—p. 359.
Influencing the Biologic Action of Light. L. Pincussen.—p. 366.
*Cytolysis in Cancer. N. Waterman and L. de Kromme.—p. 377.
Influence of Splenic Extract on Elimination of Dyes from the Blood. G. Farkas and H. Tangl.—p. 399.
Influence of Histamine and Choline on the Same. G. Farkas and H. Tangl.—p. 406.
Influence of Hormones on the Same. H. Tangl.—p. 411.
Organ Extracts and Growth of Rats. H. Tangl.—p. 418.
Avitaminosis in Pigeons After Removal of Hemispheres. B. J. Bajandurow.—p. 442.
Fractioning the Reducing Substances in Blood Filtrates. B. Sjollema.—p. 453.
Cryoscopic Thermometer. H. Menzel.—p. 460.
Oxalic Acid in Urine. C. G. Holmberg.—p. 463.
Formation of Lactic Acid by Yeast. C. Neuberg and M. Kobel.—p. 470.

Administration of Iodine to Lactating Rats.—Maurer and Diez fed lactating rats partly on maize grown on a soil which contained a large amount of iodine, partly on milk from cows which received daily 4 mg. of iodine. The young suckled by these weighed about 20 per cent more than the controls.

Cytolysis in Cancer.—Waterman and de Kromme confirmed on tarred animals the fundamental observations of Freund and Kaminer.

Deutsche medizinische Wochenschrift, Berlin

53: 781-820 (May 6) 1927

*Infraclavicular Infiltration of the Lungs. H. Assmann.—p. 781.
"Sanocrysin" Treatment. H. Scholz.—p. 783.
Calmette's Vaccination Against Tuberculosis. W. Keller.—p. 786.
Diagnosis of Sporadic Scurvy. H. Seckel.—p. 790.
Psoriasis and the Endocrine System. A. Buschke and W. Curth.—p. 792.
*Sensitiveness of the Dura Mater of the Brain. M. Neiding.—p. 795.
Vitamins in the Etiology of Cancer. R. Erdmann et al.—p. 796.
Stammering. A. Liebmann.—p. 800.
A New Gastroduodenal Apparatus. M. Einhorn.—p. 802.
Technic of the Normomastic Reaction. F. Meyer.—p. 802.
Automatic Irrigator Stopcock. Natannsen.—p. 803.
Ethylchloride Plus Cologne for Anesthesia. M. Senator.—p. 803.
Surgery in 1926. A. W. Fischer.—p. 803.
Remarks in the Chamber of Physicians. S. Alexander.—p. 806.
Impressions from the Wiesbaden Congress. J. Schwalbe.—p. 807.

Infraclavicular Infiltration of the Lungs.—In young adults Assmann frequently observed isolated infraclavicular foci as the first signs of tuberculosis. The foci are usually located laterally. They are important for early diagnosis and treatment.

Sensitiveness of the Dura Mater.—Neiding concludes from his observations that the dura mater in man does not register the sensation of pain. The nerves accompanying the arteria meningea media may, however, be sensitive.

53: 821-864 (May 13) 1927

Psychotherapy. Gaupp.—p. 821. C'td.
*Radium Treatment of Goiters. F. Gudzent and E. Kussat.—p. 823.
*Malignant Diphtheria. H. Deicher and F. Agulnik.—p. 825.
Treatment of Influenza in Children. G. Maly.—p. 829.
*Experimental Gonorrhea in Animals. Partsch and Nagell.—p. 835.
Dissemination of Tubercle Bacilli by Patients. P. Kolf.—p. 836.
Instrument for Squeezing Tonsils. Mayer-Breitbach.—p. 836.
Treatment of Obesity. R. Kolb.—p. 836.
Treatment of a Dwarf with a Thyroid Preparation. Hurwitz.—p. 837.
Interlabial Occlusion of the Vulva in Children. K. Ochsenius.—p. 838.
*Varicose Ulcer of the Leg. Lippmann.—p. 839.
Roentgen-Ray Treatment in Gynecology. K. Herold.—p. 840. C'cn.
A Bill on Proprietary Remedies. H. Meyer.—p. 841.
Parliaments and Medicine. K. Finkenrath.—p. 843.
Institute for Experimental Balneotherapy in Wiesbaden. F. Blumenfeld.—p. 843.
Medical Thinking. Goldscheider.—p. 844. C'td.
A Criticism of Criticism. R. von den Velden.—p. 845.

Radium Treatment of Goiters.—Gudzent and Kussat report favorable results from irradiation of goiters with radium or mesothorium. They consider this treatment the method of choice in exophthalmic goiter, while they are in favor of surgery in goiters without signs of hyperfunction.

Malignant Diphtheria.—Deicher and Agulnik's figures show that the gravity of diphtheria has increased since 1925. The mortality in their hospital rose from 6.1 per cent in 1923 to 17.4 per cent in 1926. Deaths occurred even among older children and adults. The serum (average dose 20,000 units intravenously and 20,000 units intramuscularly to start with) is of reliable help only on the first day, it helps less on the second and not much when administered later, although it should be given even then. It seems that the thirty year period of mild diphtheria is at its end.

Experimental Gonorrhea in Animals.—Partsch and Nagell were unable to confirm Borju and Serisorin's results in production of gonorrheal infection of the eye in rabbits after preliminary instillation of bile. They also failed in their attempts to induce gonorrheal arthritis in dogs and rabbits, even after injury to the joints.

Varicose Ulcer of the Leg.—Lippmann calls attention to the old method of treatment by application of a 2 to 7 per cent solution of chlorinated lime. The gauze soaked in the solution should not be larger than the ulcer. The dressing is covered with a water-proof paper and changed twice daily.

Deutsche Zeitschrift für Chirurgie, Leipzig

201: 1-144 (March) 1927

Cholesteatoma of the Cerebellopontile Angle. W. Anschütz.—p. 1.
*Influence of Tracheal Stenosis on the Heart and Circulation. E. Sulger.—p. 21.
A New Ether Mask. W. Buschmann.—p. 60.
Pseudarthrosis. B. Pfab.—p. 71.
Bilateral Lesion of the Os Naviculare Pedis in an Adult. W. Müller.—p. 84.
Fracture of the Lesser Trochanter from Muscular Strain. K. Urban.—p. 89.
Toxic Adenoma: B. Breitner.—p. 95.
Carcinoma of the Breast. T. Antoine and B. Pfab.—p. 99.
*Osteoplastic Repair of the Thoracic Wall. W. Graf.—p. 109.
Suture of the Heart. M. Jakob.—p. 115.
Operation for Cleft Palate in Older Children and Adults. W. Deubner.—p. 117.
Death from Bleeding into the Tissues. H. Roltsch.—p. 122.

Influence of Tracheal Stenosis on the Heart and Circulation.—From experiments on dogs, Sulger concludes that enlargement of the heart results from stenosis of the trachea only when the hindrance to expiration and that to inspiration are equal or when expiration is free while inspiration is obstructed. The cardiac enlargement affects chiefly the right auricle and ventricle. The blood pressure in the pulmonary artery may fall, if the stenosis is severe. If inspiration is free and expiration not too greatly hindered, the heart and the blood pressure in the carotid and pulmonary arteries are not appreciably affected. If the expiratory obstruction is very great, the heart may become reduced in size.

Osteoplasty of the Thoracic Wall.—The main feature of the method described by Graf for repairing large defects of the thoracic skeleton consists in splitting longitudinally the remaining segments of the partially lost ribs and turning back the external portion with its soft parts connections over the area to be covered.

Klinische Wochenschrift, Berlin

6: 769-832 (April 23) 1927

Exchange of Substances Through Capillaries. A. Krogh.—p. 769.
Interaction of Somatic and Mental Factors. F. Mohr.—p. 772.
*Functional Pathology of the Liver. G. von Bergmann.—p. 776.
*Biliary Acids in Jaundice. F. Rosenthal and L. Wislicki.—p. 781.
Skin Tests in Asthma. F. Klewitz and R. Wigand.—p. 784.
*Food and the Capillaries. M. Gänsslen.—p. 786.
*Condition of Serum Calcium. K. Klinke.—p. 791.
*Hyperplasias of the Thyroid. H. Zondek.—p. 794.
Antirachitic Action of Ergosterol. H. Beumer and C. Falkenheim.—p. 798.
Basal Metabolism in Endocrine Diseases. H. Schwarz.—p. 799.
Metabolism of Carbohydrates and Fats in Pregnancy. A. Gottschalk.—p. 802.
*Hyperventilation of the Lungs and Gastric Secretion. F. Delhougne.—p. 804.
Sugar in Arterial and Venous Blood. G. Rosenow.—p. 805.
*Fever Treatment of Experimental Syphilis. R. Wagner and F. Breinl.—p. 805.
Roentgen-Ray Diagnosis of Pulmonary Tuberculosis. L. Steffen.—p. 807.
Idem. A. Fraenkel.—p. 810.
The Gastro-Intestinal Canal and Acid-Base Equilibrium. K. Beckmann.—p. 812.
Masks for Prevention of Allergic Diseases. E. Fränkel and E. Levy.—p. 831.
Intravenous Injection of Ergotamine Tartrate. F. von Mikulicz-Radecki.—p. 832.

Functional Pathology of the Liver.—Bergmann injects intravenously 0.07 Gm. of bilirubin (about one seventh of the normal daily production) in 10 cc. of a 5 per cent solution of sodium bicarbonate. The blood bilirubin returns to the previous level in from three to four hours in normal subjects. The return is slower in patients with disturbances of the liver, especially in cirrhosis. Grave alcoholic intoxication is also followed by a prolonged elimination time. He is convinced that alcohol plays an important — although certainly not exclusive — rôle in the pathogenesis of cirrhosis of the liver.

Biliary Acids in Jaundice.—Rosenthal and Wislicki revised the conception of cholemia, in the sense of auto-intoxication with biliary acids. Cholascos is a striking example of it. The concentration of these acids in the serum from patients with jaundice varies between 5.5 and 12.7 mg. per hundred cubic centimeters. The erythrocytes contain more biliary acids than the serum. Since the lethal concentration may be estimated at about 20 mg. per hundred cubic centimeters, such patients would invariably die, if they had to depend on the elimination of these acids by the urine (about 0.1 to 0.2 Gm. daily). Unless intestinal elimination is proved, it appears probable that the diseased liver restricts, as a rule, the formation of biliary acids. They observed 24 mg. of biliary acids per hundred cubic centimeters of serum in a fatal case of Weil's disease.

Food and the Capillaries.—Gänsslen investigated the changes in the capillaries in two students. He observed a dilatation of the capillaries together with a hemorrhagic tendency resembling scurvy and an increased absorption of fluid from artificial blisters after ten days of a diet containing excessive amounts of meat (three pounds a day). The changes retrogressed on a milk and vegetable diet.

Condition of Serum Calcium.—Klinke found that the calcium concentration in serum was not altered by repeated freezing. He concludes from this and other observations that the serum cannot be an oversaturated solution of calcium carbonate or phosphate. He believes that the serum calcium is partly ionized (about 3 mg. per hundred cubic centimeters), partly dissolved as a complex or molecular salt. Part of the latter compound is loosely adsorbed to proteins. He believes that the ionized calcium is diminished in tetany and chronic nephritis, but that the concentration of the complex salt is lowered in tetany alone — not in nephritis, unless there are convulsions. The ionized calcium and the complex salt are ultrafiltrable. The salt adsorbed to proteins splits off on dialysis and then passes into the outer fluid. This explains the difference in results from ultrafiltration and from dialysis.

Hyperplasias of the Thyroid.—Zondek describes four cases which might be classified as "obese exophthalmic goiter." Such patients are intolerant to thyroid treatment.

Hyperventilation of the Lungs and Gastric Secretion.—Delhougne found that prolonged hyperpnea inhibits, to some extent, the acid secretion of the stomach. This is due to the alkalosis of the blood.

Fever Treatment of Experimental Syphilis.—Wagner and Breinl infected rabbits with syphilis. Experimental infection of these animals with Rocky Mountain spotted fever caused a rise in temperature to from 40 to 41 C., lasting for 1 week, and exerted a curative influence on the syphilitic infection.

Medizinische Klinik, Berlin

6: 833-880 (April 30) 1927

Syphilis and the Endocrine System. A. Büschke and W. Jost.—p. 833.
*Carbohydrate Metabolism and the Avidity Theory. W. Falta.—p. 835.
*Physiologic Variations of Leukocyte Counts. E. F. Müller and W. F. Petersen.—p. 840.
Perna Disease (Chlorine Acne). Teleky.—p. 845. C'td.
Irradiated Protein-Free Milk Fat. F. Rohr and O. Schultz.—p. 848.
Albumin "A" Reaction. K. Posener and W. Behrens.—p. 853.
Metabolism in Cystinuria. M. Altmann.—p. 854.
Sensitiveness of Pleura and Pericardium. Unverricht.—p. 855.
"Regulation of Blood Sugar." F. Depisch and R. Hasenöhrl.—p. 855.
"Nomenclature of Blood Groups." F. Verzár.—p. 856.
*Alimentary Hyperglycemia. H. Häusler and O. Loewi.—p. 856.
*The Antagonist of Insulin. S. Dietrich et al.—p. 856.
*Source of Glycemin. S. Dietrich.—p. 856.
*Insulin in Pancreatico-Duodenal Vein. S. Dietrich.—p. 857.
Skin Injury from Thorium X. W. Wolffenstein.—p. 857.
Diagnosis and Treatment of Hemorrhoids. H. Elsner.—p. 858.
International Sanitation Conference in Paris. E. Seligmann.—p. 861.

Carbohydrate Metabolism and the Avidity Theory.—Falta deals with the theory of regulation of the carbohydrate metabolism in diabetes especially from the standpoint of his theory of avidity. He believes that insulin increases the avidity of tissues for dextrose. The interaction of the pancreas with the thyroid and the suprarenals contributes to the maintenance of equilibrium.

Physiologic Variations of Leukocyte Counts.—Müller and Petersen have extended their investigation on the interrelation of the splanchnic and peripheral areas to comparisons between the functional conditions of the stomach and of the peripheral capillaries, using the number of mature neutrophil leukocytes as indicator of the latter. Whenever the hunger contractions of the stomach set in, the number of leukocytes in the periphery increases. It decreases, when the stomach dilates and starts secreting spontaneously or under the influence of food or of injections of various substances. The hemoclastic crisis as well as the digestive leukocytosis are physiologic symptoms of the simultaneous physiologic vegetative reactions of the splanchnic area and of the periphery. The chronic leukopenia in patients with peptic ulcers is another phenomenon of this type. The tendency to secretion of hydrochloric acid lowers the hunger contractions in these individuals and at the same time conditions the peripheral leukopenia. The abnormal vegetative equilibrium in such individuals precedes the formation of an ulcer and continues after its healing. The leukocytosis in hungry diabetic patients is intimately connected with the powerful hunger contractions of the stomach.

Alimentary Hyperglycemia.—Häusler and Loewi found that not only atropine, but also section of the vagi prevents the insulin secretion that follows a subcutaneous injection of dextrose.

The Antagonist of Insulin.—Dietrich, Häusler and Loewi found in the blood of pancreatectomized dogs the same substance, inhibiting the fixation of dextrose to erythrocytes, that they had discovered in the blood of diabetic patients and of animals with hyperglycemia induced by epinephrine, venesection or administration of dextrose. This substance also increases the secretion of dextrose by the perfused frog liver. They have given the name "glycemin" (*Glykämin*) to this antagonist of insulin.

Source of Glycemin.—Dietrich fed animals with dextrose. He found that the glycemin mentioned in the preceding abstract appears first in the hepatic veins.

Insulin in the Pancreatico-Duodenal Vein.—Dietrich succeeded in demonstrating the appearance of insulin in the pancreatico-duodenal vein after stimulation of the vagus or after subcutaneous injection of dextrose. The insulin appears there before it is demonstrable elsewhere in the blood.

23: 583-626 (April 22) 1927

Atypical Cachexia. H. Curschmann.—p. 583.
Results of Surgery of Peptic Ulcer. Finsterer.—p. 585.
Diaphoretic Tea. W. Wiechowski.—p. 590.
The Recent Influenza Epidemic. R. Fischl.—p. 592.
Anuria from Impacted Renal Calculus. G. Rosenfeld.—p. 594.
"Sudden Apnea in Tabes." N. Ortner.—p. 595.
Trichinosis. K. Trommer and W. Hebenstreit.—p. 595. C'td.
The Kidney in Diabetic Coma. H. Metzger.—p. 598.
Treatment of Syphilis. E. Saalfeld.—p. 598.
*Change of the Water Spirochete into Spirocheta Icterogenes. P. Uhlenhuth and E. Herrmann.—p. 599.
Pediculus Capitis and Pediculus Vestimenti. L. Freund.—p. 601.
Thyroxin in Obesity. A. Hartung.—p. 603.
"Pediatrics and the School Physician." L. Hoffa.—p. 604.
Reply. P. Karger.—p. 605.
Injuries to the Locomotor Apparatus from Athletics. W. Baetzner.—p. 606. C'td.
The Ability to Work. H. Engel.—p. 607.
Vitamins. F. Haurowitz.—p. 610.
Politics? Politics! E. Loewy-Hattendorf.—p. 625.

Change of the Water Spirochete Into Icterohemorrhagiae.—Uhlenhuth continued with Herrmann the investigations which he had started with Zuelzer. They succeeded again in transforming saprophytic spirochetes obtained from water and grown on mediums containing rabbit's or rat's serum into typical spirochetes of Weil's disease. Even the immunologic properties changed. Part of their experiments were carried out by first passing the strain through rats, part were done directly on guinea-pigs.

23: 627-666 (April 29) 1927

*Stimulation Treatment. W. Stoeltzner.—p. 627.
Pathogenesis of Stammering. R. Imhofer.—p. 628.
*Tetraglucosan in Treatment of Diabetes. H. Petow and F. Rothschild.—p. 631.
Cholecystography with Oral Method. M. Cohn.—p. 635.
Amebiasis. A. Gehrcke.—p. 637.
*Iritis from Recurrent Fever. I. Sachs.—p. 640.
Tuberculosis. K. Trommer and W. Hebenstreit.—p. 641.
Globulin and Albumin of the Serum. G. Lewin.—p. 643.
Dermoid Cyst of the Brain. G. Kopřiwa.—p. 645.
Obstetric and Gynecologic Treatment. G. Burckhard.—p. 646.
Ability to Work. H. Engel.—p. 648.
Cardiovascular Diseases. E. Edens.—p. 650.

Stimulation Treatment.—Stoeltzner injected in children glycocoll, an abiuret mixture of peptids and amino-acids and aqueous solutions of the volatile oils of various condiments, hoping to obtain a stimulating effect without the by-effects of proteins. The results were negative.

Tetraglucosan in Treatment of Diabetes.—Petow and Rothschild had good clinical results in diabetes with administration of a proprietary form of tetraglucosan. The patients tolerated from 50 to 150 Gm. of it and the acetonuria diminished.

Iritis from Recurrent Fever.—Sachs reports two cases of iritis in syphilitic patients who had been treated with recurrent fever.

23: 667-706 (May 6) 1927

Infraclavicular Tuberculous Infiltration. H. Dorendorf.—p. 667.
*Goldschmidt's Pulse Resonator. F. Kraus and S. Seelig.—p. 670.
Eunuchoidism and Height. W. Seidel.—p. 672.
"Sanocrysin" Treatment. K. Pur and H. Pohl.—p. 673.
A Renal Function Test. F. Lebermann.—p. 676.
Economic Gravity of Injury to Pianist's Hand. J. Flesch.—p. 678.
Deep Lipoma of the Forearm. F. Schulte.—p. 679.
Amebiasis in Man. A. Gehrcke.—p. 679.
Atypical Extragenital Chancres. M. Krüger.—p. 681.
"Treatment of Beginning Cataract." R. Salus.—p. 682.
"Vasoconstrictive Neurosis of the Female Nipple." Warnecke.—p. 683.
Action of the Pericardium on the Vascular System. G. Hauffe.—p. 684.
Uterine Hemorrhage and Grave Neurosis. W. Brandis.—p. 690.
Psychanalytic Literature. K. Fahrenkamp.—p. 691.
Hygiene Section of League of Nations. B. Möllers.—p. 704.

Goldschmidt's Pulse Resonator.—Kraus and Selig discuss the results obtained with R. Goldschmidt's pulse resonator. This is an instrument that records the frequency of the pulse and measures the intervals with extreme minuteness in a manner analogous to that in which tuning forks analyze sounds. The pulse is really regular ("rigid") only in great fatigue or sleepiness. Otherwise, its frequency changes about four to six times in a minute.

Münchener medizinische Wochenschrift, Munich

74: 707-746 (April 29) 1927

Scarlet Fever Antitoxin. J. Husler.—p. 707.
*Secretion of Cerebrospinal Fluid. O. Hirsch-Tabor and H. Vollmar.—p. 709.
*Acid-Base Balance of Food. A. Hermannsdorfer et al.—p. 711.
*Roentgen-Ray Treatment of Gonorrheal Arthritis. G. Schulte.—p. 717.
*Morphine Addiction as War Injury. W. Steimann.—p. 719.
Relation Between the Organism and Cancer. A. Theilhaber.—p. 721.
A New Model of a Hospital Cart. O. Vulpius.—p. 721.
Rickets. M. Pfaundler.—p. 721. C'cn.
A Physician's Thoughts on Medicine. A. Bier.—p. 726.
*Early Diagnosis of Malignant Tumors of the Maxilla. A. Krecke.—p. 729.

Secretion of Cerebrospinal Fluid.—Hirsch-Tabor and Vollmar confirm Dixon and Halliburton's observations on the increased secretion of cerobrospinal fluid in animals after intravenous injection of human cerebrospinal fluid with a positive Wassermann reaction. They had only exceptional success with injections of extracts of the brain or of the choroid plexuses.

Acid-Base Balance of Food.—Hermannsdorfer, Jung and Stein demonstrate that Ragnar Berg made a mistake when calculating the acid or alkaline value of minerals in metabolism according to simple chemical rules. For instance, calcium lactate acts in the acid sense, and lactic acid appears in the urine. The resorption of different minerals in the intestine is another uncontrollable factor. They prove experimentally that Gerson's mineral mixture tends to make the urine acid, although Berg computed that basic ions prevail in it.

Roentgen-Ray Treatment of Gonorrheal Arthritis.—Schulte reports good results in four cases.

Morphine Addiction as War Injury.—Steimann suggests that compensation for morphine addiction should be refused after such an invalid has been subjected to regular treatment. He believes that it will be necessary to have every addict declared legally incapable of managing his affairs for the time of his stay in the hospital. He believes that an addict is entitled to damages from the physician who supplies him with morphine. He warns physicians most decidedly against giving a morphine injection to themselves or to other physicians. About 1,000 German physicians are addicts, according to his estimate.

Early Diagnosis of Malignant Tumors of the Maxilla.—Krecke regards any swelling of the maxilla which lasts for more than two weeks as a possible malignant tumor. Not much time should be wasted on antisyphilitic treatment. Neuralgia of the second branch of the trigeminus should always suggest the possibility of cancer. The same applies to empyema. Slight edema of the conjunctiva or diplopia are other probable signs. A negative result of roentgen-ray examination does not, by any means, exclude the possibility of a malignant growth.

Virchows Archiv für path. Anat. und Physiol., Berlin

263: 591-848 (Feb. 17) 1927

Hypoplasia of the Pancreas. B. Kriss.—p. 591.
Malformations of the Diaphragm. P. Cartellieri.—p. 599.
Malformation of the Bladder in the Human Embryo. R. Chwalla.—p. 632.
Infantilism Due to Absence of Ovaries. P. Schürmann.—p. 649.
Dermatologic Diagnosis of Univitelline Twins. H. W. Siemens.—p. 666.
*Jaundice of New-Born Calves and Infants. E. Metzger.—p. 703.
*Prospective Potencies of Myeloblasts. A. D. Timofejewsky and S. W. Benewolenskaja.—p. 719.
Structure of Erythrocytes. M. Gutstein and G. Wallbach.—p. 741.
Pentastoma Nodes in the Human Liver. K. Sonobe.—p. 753.
Fat Metastasis in Djabetes. M. Goldzieher.—p. 769.
Gynecomasty and Syncytioma Malignum in the Male. H. Herzenberg.—p. 781.
Fibrinous Bronchitis and Tuberculosis. A. Stapf.—p. 800.
*Glycogen in the Liver in Anterior Poliomyelitis. M. Nordmann.—p. 832.
Pathologic Anatomy of the Vegetative Nervous System. B. Mogilnitzky.—p. 839.

Jaundice of New-Born Calves.—Metzger observed jaundice in 504 out of 4,000 calves; it was present in twenty-four of 322 examined shortly after birth. He attributes the phenomenon in the latter case to the immature condition of the liver, which persists for days or weeks after the calf is born.

Prospective Potencies of Myeloblasts.—Timofejewsky and Benewolenskaja explanted the leukocytes from the blood of a patient with acute myelogenous leukemia. They observed an abundant granulopoiesis and also formation of lymphocytes. They believe that the latter may have formed from the myeloblasts rather than from the lymphocytes, of which the explanted blood contained only 3 per cent.

Glycogen in the Liver in Anterior Poliomyelitis.—Nordmann found an apparent increase in the amount of glycogen in the liver of a boy who died with signs of respiratory paralysis from acute anterior poliomyelitis. Edema and infiltrates were present in the region of the nucleus of the area cinerea.

Wiener klinische Wochenschrift, Vienna

40: 577-608 (May 5) 1927

Mechanism of Malaria and Quinine Treatment. B. Busson.—p. 577.
Prosthesis After Extirpation of the Mandible. V. Orator and Stephanides.—p. 581.
Antivirus in Purulent Infections. P. Moritsch and R. Oppolzer.—p. 585.
Postencephalitic Narcolepsy. G. Stiefler.—p. 586.
Tattooing of the Cornea with Gold Chloride. A. M. Rosenstein.—p. 587.
*Treatment of True Melena of the New-Born. R. Holländer-Pilpel.—p. 589.
Arsphenamine and Gastric Ulcer. K. Herman.—p. 590.
Practical Value of Tuberculin Tests. H. Poindecker.—p. 592.
Cardiac Asthma. R. Singer.—p. 594.
Nephritis and Its Treatment. L. Jehle. Supplement.—pp. 1-20.

Treatment of True Melena of the New-Born.—Holländer-Pilpel's patient recovered after transfusion of 30 cc. of his mother's blood.

40: 609-640 (May 12) 1927

Development of Cancer from Complex Irritation. M. Askanazy.—p. 609.
Intracutaneous Injection of Living Gonococci. M. Hesse and M. E. Obermayer.—p. 613.
The Dick Test. O. Tezner and G. Ungar.—p. 616.
Primary Cancer of the Lungs. K. Ferenczy and T. Matolcsy.—p. 618.
*Spontaneous Pneumothorax in a Previously Healthy Lung. O. Hitschmann.—p. 622.
Herpes Zoster in Angina Pectoris. R. Wertheimer.—p. 623.
"Cough in Nontuberculous Children." F. Hamburger.—p. 624.
Diet in Health and Disease. R. Bauer.—p. 624.
Treatment of Chorea. H. Mautner.—p. 627.
Life Expectation After Surgical Interventions. J. Schnitzler. Supplement.—pp. 1-12.

Spontaneous Pneumothorax in a Previously Healthy Lung.—Hitschmann's patient was a young man who developed a spontaneous pneumothorax while taking a shower bath. There were apparently no other pathologic changes in the lung. At first the treatment consisted only in rest. Since the pneumothorax did not change in four weeks, a cannula was introduced into the pleural cavity. An attached valve allowed the air to pass from within outward, but not in the opposite direction. The lung was fully expanded in a day and the patient recovered after a transient exudate.

Zeitschrift f. d. ges. experimentelle Medizin, Berlin

54: 317-592 (Feb. 21) 1927

*Experiments on Splenic "Lock." N. Henning.—p. 317.
Movements of the Fasting Stomach. W. Iwanow.—p. 326.
Electrolytes of Blood from Inflamed Tissues. L. Tutkewitsch.—p. 342.
Trophic Innervation of the Tongue Muscle. K. Kuré et al.—p. 351.
Trophic Innervation of the External Eye Muscles. K. Kuré et al.—p. 366.
Electric Irritability of Denervated Muscle. K. Kuré et al.—p. 382.
Cholesterol Metabolism. H. J. Arndt.—p. 391.
Changes of Permeability from Insulin. W. F. Petersen and E. F. Müller.—p. 415.
*Alimentary Hyperglycemia. W. Grunke and K. Hesse.—p. 439.
*Inhalation of Organic Acid. W. Arnoldi et al.—p. 457.
Reversion of Hemolysis. W. Starlinger.—p. 464.
*Occlusion of Intestine and Deprivation of Water. C. Häbler.—p. 524.
*Disturbances of Movement After Section of Corpus Callosum. F. Hartmann, Jr., and W. Trendelenburg.—p. 578.

Experiments in Splenic "Lock."—Henning did not find dye in the spleen of animals injected intravenously with trypan blue, or india ink and killed immediately thereafter. This is a confirmation of the existence of a splenic "lock" similar to the functional hepatic lock discovered by Pick and Mautner. Cooling of the animals enhances the phenomenon to such an extent that the spleen does not bleed after being injured. Urethan anesthesia opens the "lock" in both cases. Bacterial infection of the blood also seems to produce splenic lock.

Alimentary Hyperglycemia.—Grunke and Hesse confirm the absence of epinephrine hyperglycemia in starving rabbits. Introduction of 2 Gm. of dextrose into the stomach was, however, followed by the typical curve. This speaks against the "stimulation" theory of alimentary hyperglycemia. They emphasize the advantages of their technic of administration of sugar: they introduce a semielastic silk catheter (no. 6 Charrière) through the nose of the rabbit into the stomach.

Inhalation of Organic Acid.—Arnoldi, Oda and Rosa investigated the results of inhalation of formic acid, which was recommended by von Kapff sixteen years ago for prevention and treatment of respiratory diseases. They found, as a rule, increased respiratory volume and oxygen consumption. They believe that pulmonary administration of acid valences increases the dissociation of oxygen, loosens its fixation and by these means improves its consumption. On Arnoldi's theory that a disturbance of oxidative processes with accumulation of acid valences in the blood is the cause of some cases of insomnia, they extend the indications to this symptom.

Occlusion of Intestine and Deprivation of Water.—Häbler describes his modification of London's angiostomy. With it he investigated the blood changes in experimental ileus. Besides the loss in water, which is not so great as to prove fatal, he regards alkalosis as an important factor of the syndrome.

Disturbances of Movement After Section of Corpus Callosum.—Hartmann and Trendelenburg sectioned the corpus callosum in cats and monkeys. The absence of changes in the movements of these animals did not occur; apraxia is especially noted.

Zentralblatt für Chirurgie, Leipzig

54: 641-704 (March 12) 1927

*Posttonsillitic Sepsis. R. Bertelsmann.—p. 642.
Functional Treatment of Flat-Foot in Infants. G. Brandt.—p. 645.
Dextroposition of the Large Intestine After Operation. C. Hammesfahr.—p. 647.
Operative Treatment of Habitual Dislocation of the Shoulder. Z. Heymanowitsch.—p. 648.
Etiology of Köhler's Disease of the Second Metatarsal. M. Meyer.—p. 651.
Standardization in Hospital Equipment. R. Mühsam.—p. 654.
The Pleasantest General Anesthesia. G. von Lobmayer.—p. 659.
*Fabella and Loose Body in the Knee. E. Sonntag.—p. 660.
Retroperitoneal Adenosarcoma Simulating Appendicitis. S. Lindqvist.—p. 662.

Posttonsillitic Sepsis or Bacteriemia.—In a case of sepsis of nine days' duration, which followed tonsillitis with paratonsillar abscess, Bertelsmann exposed but did not ligate the internal jugular vein. Streptococcic edema, not pus, was found. Venous thrombosis was not present. The patient recovered.

Fabella and Loose Body in the Knee.—A girl was referred to Sonntag for operation for loose body in the knee. The roentgenogram which she brought with her showed, not a loose body, but a fabella. A slight effusion and limitation of motion were, nevertheless, present in the joint and Sonntag ordered further roentgenograms to be taken. These showed both fabella and loose body, the latter between the femur and the patella. The anterior view showed the fabella situated mesially in the articular space, a roentgenologic site not heretofore reported in the German literature.

Zentralblatt für Gynäkologie, Leipzig

51: 513-576 (Feb. 26) 1927

Value of Capillary Microscopy in Eclampsia. T. Heynemann.—p. 518.
*Betain in Human Amniotic Fluid. F. Kirstein.—p. 522.
Hemorrhages After Roentgen-Ray Castration. H. E. Scheyer.—p. 523.
Tetany After Gynecologic Operations. A. Szenes.—p. 528.
An Abdominal Pregnancy Continuing to Term. O. V. Timoschenko.—p. 531.
Finger Prints in the Question of Paternity. K. Bonnevie.—p. 539.
*Ventrifixation of the Round Ligament. P. Rissmann.—p. 543.
*Results with Baldy-Frank's Operation. K. Otto.—p. 545.
Dienst's Serologic Diagnosis of Pregnancy. E. Derankova.—p. 548.

Betain in Human Amniotic Fluid.—Kirstein demonstrated betain in the human amniotic fluid. This confirms the belief that the amniotic fluid is not fetal urine.

Ventrifixation of the Round Ligament Without Danger of Ileus.—In Rissmann's method, which he has used successfully in one hundred cases of retroflexion with adhesions, only the lateral portion of the round ligament is sutured to the abdominal wall. The method is described.

Results with the Baldy-Frank Operation for Retroflexion.—In fifty-six of sixty women, reexamined more than six months after the operation, the uterus was in anteflexion. In the four other women the results were fair. There had been fourteen pregnancies, including eight carried to term, four still continuing and two abortions, one criminal, the other without known cause.

51: 577-640 (March 5) 1927

Is Menstruation Necessary to Woman's Health? B. Aschner.—p. 577.
*The Peripheral Circulation After a Labor Pain. W. Haupt.—p. 595.
*Tubal Implantation. F. Unterberger.—p. 602.
Protest Against Ambulatory Curettage. H. Walther.—p. 606.
*Microscopic Examination of Blood from the Uterus. H. Rotter.—p. 607.
*Exphthalmic Goiter After Roentgen-Ray Castration. A. Ujma.—p. 610.
Spontaneous Rupture of Uterus in Pregnancy. F. Thomä.—p. 614.
Case of Ectopia Cordis Pectoris. S. Bloch.—p. 625.
Artificial Sterilization of the Woman. R. Schreiner.—p. 627.
Technic of Tubal Sterilization. K. N. Rabinowitsch.—p. 634.

The Work of the Peripheral Circulation Shortly After a Labor Pain.—Haupt arrives at a value representing the work of the pulse by measuring simultaneously the pulse volume and the blood pressure. He studied these "pulse-work-values" on a large number of healthy parturient women and found that they were frequently higher after a labor pain than while it was going on or during the interval. This rise was more often noted after a slight than after a severe pain. It was greater in the second than in the first stage of labor, and in restless than in quiet patients. The increase was usually from one eighth to one fifth of the initial (interval) value, but a value equal to twice the initial value was sometimes reached.

Tubal Implantation.—This operation has been performed by Unterberger six times, with two successes, the second of which is here reported. The right tube was excised, as useless. The isthmic portion of the left tube, which presented nodular thickening, was resected. About 6 cm. of the tube remained. The uterine end was slit longitudinally into two segments and the tube was implanted in the fundus of the uterus, which was opened by a sagittal incision. He lays stress on the slitting, as essential to success. Three months after the operation, the woman, a nullipara, aged 33, with a history of one spontaneous abortion five years before, conceived. She is now in the fifth month of pregnancy.

Microscopic Examination of Blood from the Uterus.—Rotter found that in menstrual blood the number of polymorphonuclear leukocytes rose from the first day on, while that of the lymphocytes fell. The opposite was the case in peripheral blood. In inflammatory diseases of the genital organs, the menstrual blood was the same as in health, but the blood of intermenstrual bleedings exhibited leukocytosis-lymphopenia. In fibromyoma also, the menstrual blood was normal, while the blood of intermenstrual hemorrhage differed from normal menstrual blood in having standard values. In uterine carcinoma a decided lymphocytosis-leukopenia was present. If confirmed, this characteristic should simplify the early diagnosis. The technic of obtaining the blood is described, and Rotter notes that further researches are in progress.

Exophthalmic Goiter and Roentgen-Ray Castration.—A woman, age not stated, of neurotic tendency, underwent roentgen-ray castration for hemorrhages from polypous growths in the uterus. The procedure was rapidly followed by symptoms of exophthalmic goiter. The basal metabolism and the leukocyte count have not been determined, because of the patient's objection to examinations, but the clinical picture resembles that of exophthalmic goiter in all particulars. Ujma suggests that operation, respecting the ovaries, should be preferred to castrating treatment by roentgen rays in patients with nervous disturbances.

Zentralblatt für innere Medizin, Leipzig

48: 473-488 (May 7) 1927

*Diseases Caused by Dyes and Cleaning Fluids. H. Schmidt-Lamberg.—p. 474.

Diseases Caused by Dyes and Cleaning Fluids.—Schmidt-Lamberg publishes statistics on the occupational diseases of

cleaners and dyers. The gases from cleaning fluids caused a considerable number of diseases of the lungs, bronchi and larynx. Abscesses and septic conditions occurred in many cases and caused eighteen deaths in Prussia. It is probable that the gravity of the process would have been less, if the workers had taken care of small injuries, instead of exposing them repeatedly to the cleaning fluids and dyes.

Klinicheskaya Meditsina, Moscow

5: 211-273 (Feb.) 1927. Partial Index

Clinical Diagnosis of Myocardiac Infarction. B. A. Egoroff.—p. 229.
Torticollis of Extrapyramidal Origin. N. M. Itsenko.—p. 242.
*Oxygen in Treatment of Parkinson's Disease. L. S. Sholomovich and N. A. Tolokonnikoff.—p. 249.
*Surface Tension of the Urine in Skin Diseases. I. Basilevich and V. Popel.—p. 253.

Oxygen in Treatment of Parkinson's Disease.—Sholomovich and Tolokonnikoff report the results of the treatment in eleven patients. A daily dose of 400 or 500 cc. of oxygen was injected subcutaneously. A series consisted of from twenty to thirty-two injections. After an interval of from two to six weeks, the series was sometimes repeated. The general weakness, slowness and stiffness of motion and the masklike expression of the face, were improved in eight cases. The gait improved in five; the tremor became less rapid in six. The speech was ameliorated in four, in two very markedly. In three, the rate of twitching was reduced from fifty to from three to five times a minute. The results have persisted during the eight months that the patients have been under observation.

Variations in Surface Tension of the Urine in Skin Diseases.—The surface tension of the urine was examined by Bazilevich and Popel in 103 patients with various skin diseases. It was altered in 22.3 per cent of the cases. In persons with psoriasis vulgaris, lupus vulgaris or urticaria, it was decreased. In lupus vulgaris, the changes in the tension are secondary, while in urticaria, they may be primary, testifying to considerable disturbances in the hepatic functioning. The facts may throw light on the etiology of many skin lesions, the cause of which is yet uncertain.

Hospitalstidende, Copenhagen

70: 287-310 (March 31) 1927

*The Cholesterol Content of the Blood in Different Diseases. K. Barmvater.—p. 287.
Are the So-Called "Extrapyramidal Neurons" Uncrossed? V. Christiansen.—p. 296.

The Cholesterol Content of the Blood in Different Diseases.—Grigaut's method was used by Barmvater in their study. The results are arranged in three groups. The first consists of the normal cholesterol content of the blood serum, which he places at 0.202 per cent. The second group consists of the high values and the third of the low values, both having pathologic significance. In diabetes mellitus the cholesterol content is frequently normal or raised; it was as high as 0.55 per cent in one instance and as low as 0.114 in two. The same is true of certain types of icterus, although for hematogenous icterus he found very low values. In Basedow's disease and in pneumonia the values are low or nearly normal. In nephritides normal values are sometimes found, but in nephroses they were as high as 0.600 per cent. In anemias and leukemias the values are specially low, reaching 0.050 per cent. These results agree very well with most of the previous investigations.

Norsk Magazine for Lægevidenskapen, Oslo

88: 345-424 (May) 1927

*Exhausted Heart. N. B. Grøndahl.—p. 345.
Erysipeloid. O. Lundt.—p. 360.
Para-Articular Arthrodesis of the Hip-Joint from Nontuberculous Diseases. S. Widerøe.—p. 364.
Primary Tumors in Joint Capsules. F. Harbitz.—p. 369.

Exhausted Heart, Amentia Caused by Necrosis of the Tissue.—Grøndahl describes an interesting case. A man, 44 years old, had been a very efficient sportsman in his youth—especially in skiing and football. During recent years he had not been training, but had played football. For many years, he had had slight attacks of collapse. He did not use tobacco or alcohol. In August, 1925, he had a severe attack of heart failure supposed to be caused by myocarditis and dilatation. There was violent arrhythmia. Three weeks later emboli were carried to the vessels of the lower leg. Embolectomy was performed only fifteen hours after the appearance of the embolus but improvement did not follow. A psychosis of the amentia type developed, which was supposed to be due to intoxication from advancing gangrene of the right leg. Amputation was done, but the surgeon did not go high enough. After twelve days reamputation was performed without complications. After a period of comparatively good health emboli appeared in the spleen. The same psychosis occurred and lasted until his death, in November, 1925. Necropsy showed some myocarditis with dilatation of the heart, emboli and an enlarged spleen. Grøndahl's opinion is that the patient's heart disease was due to repeated violent overexertion during the football matches, which form of sport is dangerous to older people. Signs of simultaneous degeneration of the liver of any considerable degree were not found.

Ugeskrift for Læger, Copenhagen

89: 365-390 (May 5) 1927

Accidents from Electricity. J. Fog.—p. 365. C'cn.
Metal Salt Therapy. O. Helms and J. Frederiksen.—p. 371.
An Observation on Insulin Treatment. E. Faber.—p. 376.
*Subcutaneous Air Emphysema. C. Slemmesen.—p. 377.
*Attempted Suicide with Insulin. K. Secher.—p. 378.

Subcutaneous Air-Emphysema.—Clemmesen describes the case of a boy, 18 years old, who was butted by a bull and developed air emphysema of the left thorax and the left side of the abdomen. The scrotum became as large as a child's head and after one hour both eyes were closed. Breathing was difficult, especially on expiration. The pleura was incised and the dyspnea diminished almost at once. A thick rubber drainage tube was placed in the pleural cavity and the incision closed air-tight. The tube was long enough to reach the bottom of a pan of water on the floor. The air passing through the lung lesion on inspiration was on expiration forced out through the tube, as shown by the air bubbles coming up through the water. The drain also gave escape to the 200 or more cubic centimeters of blood that had accumulated in the pleural cavity. The dyspnea disappeared quickly, also the subcutaneous emphysema. The day after the operation the lung lesion had probably closed as the bubbling from the tube had ceased; after four days the hemorrhage stopped, and the wound healed by granulation. Eleven days after the operation a comminuted fracture of the left fifth rib in the axilla was found, but both lobes of the lung were entirely unfolded, and there was no discharge from the lung.

Attempt at Suicide with Insulin.—Secher reports a case of a patient, aged 28, with long standing diabetes, who under an attack of depression took a single massive dose of 60 units of insulin with suicidal intent. Immediately he regretted what he had done and took two tablespoonfuls of sugar; he recovered. Secher suggests the possibility of murder being committed with this substance by experts, in which case the cause of death would be difficult to prove at necropsy.

89: 391-410 (May 12) 1927

Accidents from Electricity. E. von Holstein Rathlou.—p. 391. C'td.
*Glycosuria in Medical Practice. J. E. Holst.—p. 396.

Benign Glycosuria.—Holst has examined 150 persons who were denied life insurance on account of glycosuria. They were under observation for from five to sixteen years and in 70 per cent no symptoms of diabetes mellitus could be found. In an examination of carbohydrate metabolism, three factors must be known. One is the value of the fasting blood sugar, the other the increase in blood sugar after ingestion of carbohydrates, the third the threshold value of glycosuria. He quotes the following case: When the patient was 16 years old glycosuria was accidentally discovered; this has always persisted. The first year the patient was on a diet low in carbohydrates, but could not be made sugar-free. Gradually he gave up the diet and the glycosuria did not increase and his condition after fourteen years remains unchanged. He has never had any other symptoms of diabetes and the glycosuria never bothered him.